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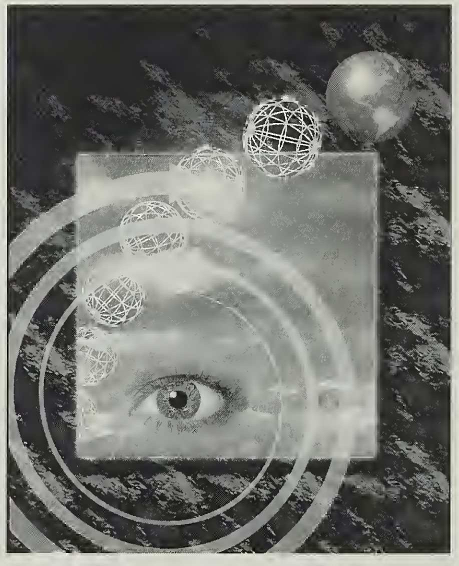

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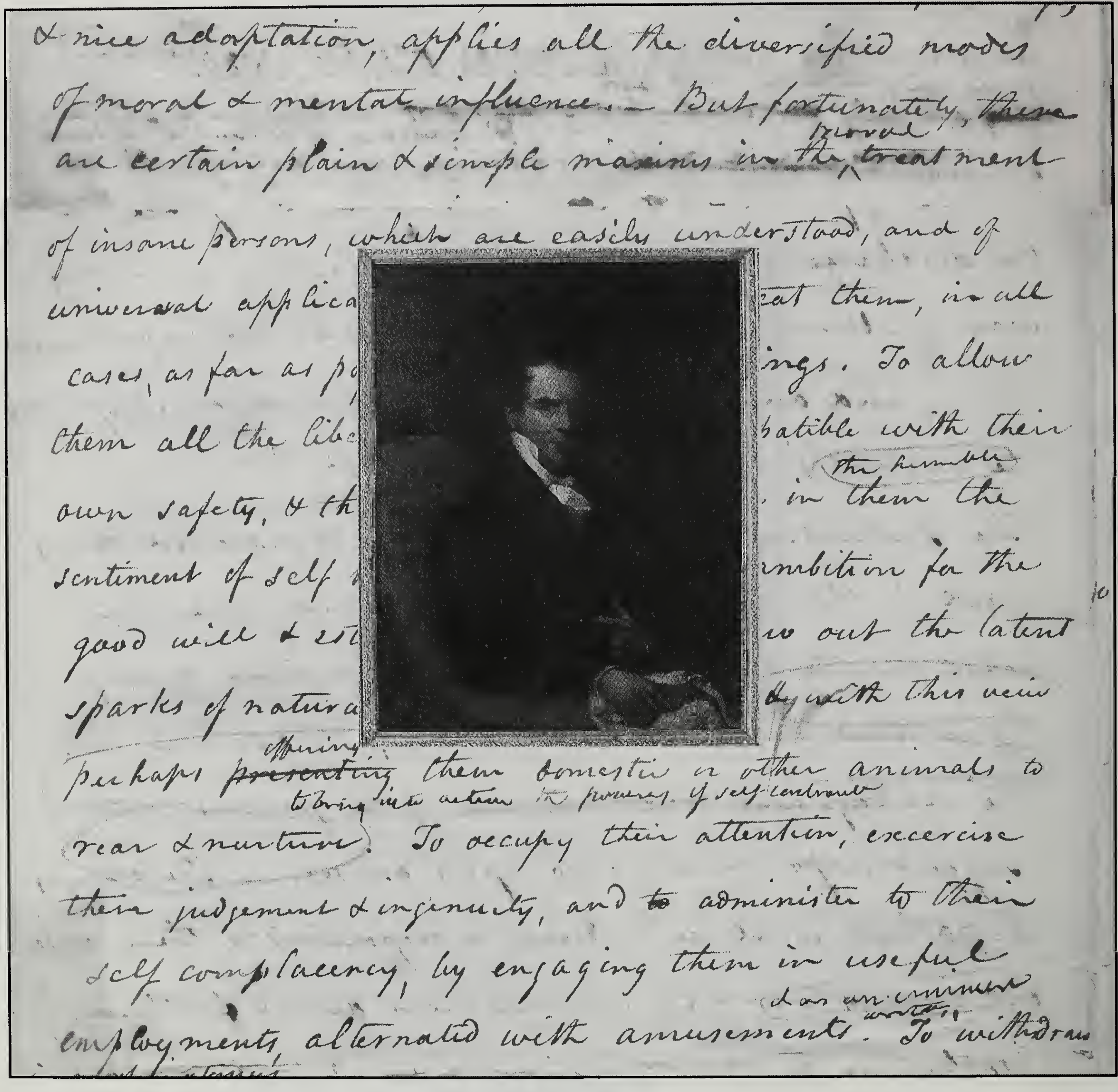

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sentiment of self … mbition for the
good will & est … w out the latent
sparks of natura … y with this view
perhaps ~~presenting~~ offering them domestic or other animals to
to bring into action the powers of self control
rear & nurture. To occupy their attention, excercise
their judgement & ingenuity, and ~~to~~ administer to their
self complacency, by engaging them in useful
& as an innocent
employments, alternated with amusements. To withdraw

From an early handwritten manuscript of Eli Todd, in which he lays out the tenets of moral treatment:

… insanity in most cases is a disease in which the moral and intellectual faculties are not destroyed, but some one or more of them are in a morbid condition; perhaps in a state of unequal excitation, some acting with too much, others with too little energy, and by this inequality disturbing and breaking up the order, series, and just proportion of relations which previously existed in the mind between its own ideas and external things. The great design of moral management is to bring those faculties which yet remain sound to bear upon those which are diseased, and by their operation to modify, to counteract, or to suspend their morbid actions.

… there are certain plain and simple maxims in the moral treatment of insane persons which are easily understood, and of universal applications. These are to treat them, in all cases, as far as possible, as rational beings. To allow them all the liberty and indulgence compatible with their own safety, and that of others. To cherish in them the sentiments of self-respect. To excite an ambition for the good will and esteem of others. To draw out the latent sparks of natural and social affection. To Occupy their attention, exercise their judgment and ingenuity, and to administer to their self-complacency by engaging them in useful employments, alternated with amusements. To withdraw, in most instances, their minds as much as possible from every former scene and every former companion, setting before them a new world and giving an entire change to the current of their recollections and ideas. At the same time that all this is to be attempted by an uniform course of kindness and gentleness of manners, a sense of authority must be maintained, and the patient made to perceive the impolicy of his forwardness, by the consequent privations and personal restraints to which it invariably subjects him.

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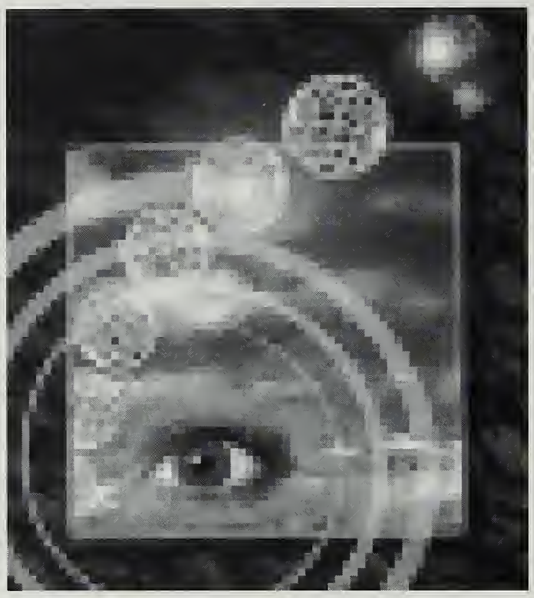

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A Special Issue: Hospice / Physician Assisted Living (PAL)

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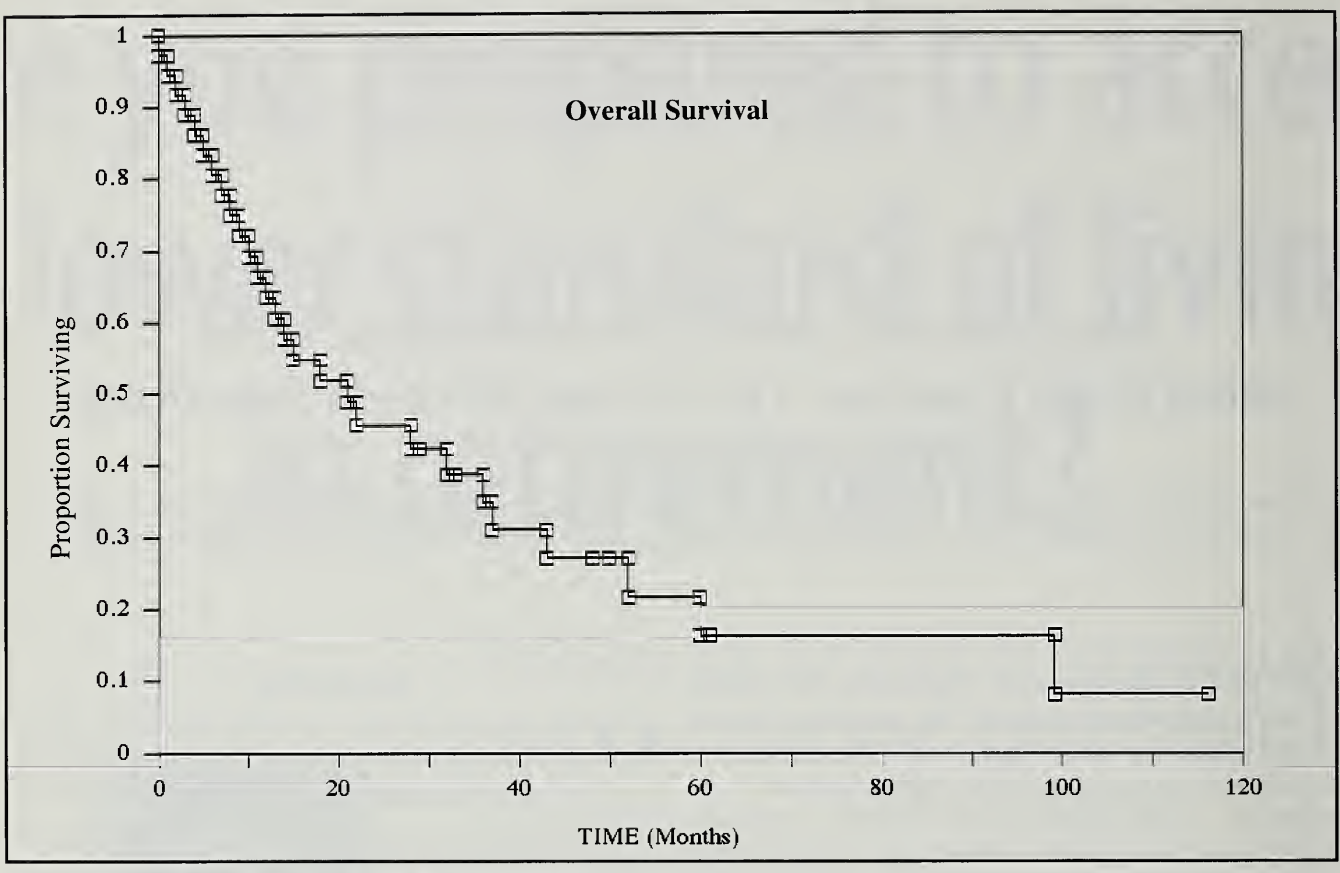

Figure 1. Overall actuarial survival for all patients reviewed.

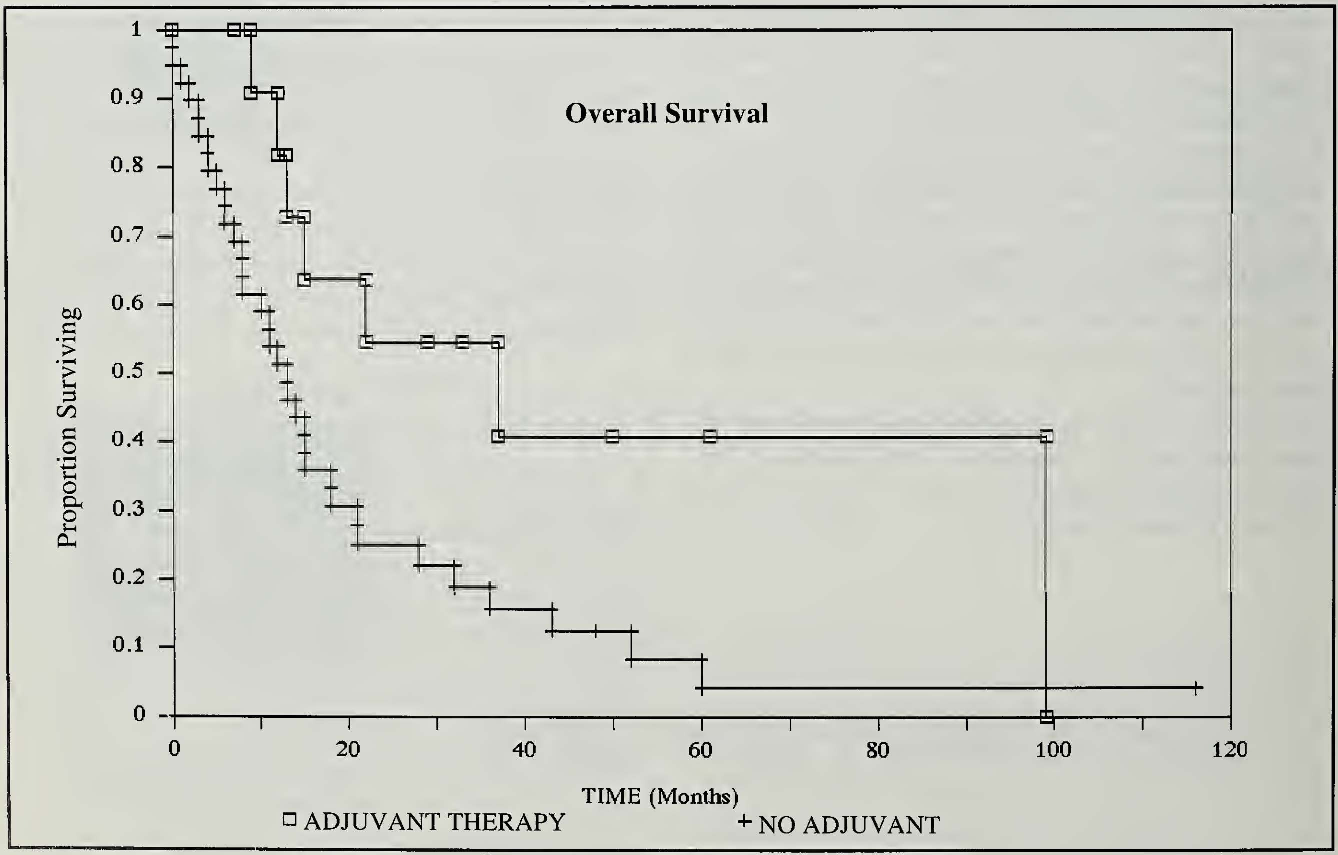

Figure 2. Comparison of patients who received or did not receive adjuvant treatment.

patients alive at 12, 24, and 60 months.[11] The patient's sex, age at diagnosis, and postoperative treatment were recorded. Local lymph node involvement with tumor was recorded from the pathology report information as present or absent. Comparison of survival experience within groups was calculated with the Wilcoxon Gehan survival statistic and Levene's test for equality of variances.

Results

During the 10-year period from 1 January 1982, to 31 December 1992, 770 patients in the greater Hartford area were diagnosed with pancreatic cancer. During this period, 51 patients had complete surgical resection for cure of adenocarcinoma of the head of the pancreas using the Whipple procedure. Twenty-nine of the patients were male (57%) and 22 female (43%), with the median age being 63 years.

Two patients (4%) died within 30 days of operation. One patient died from a myocardial infarction on postoperative day 2, and the second died of septic complications on postoperative day 29. The median survival of all patients, regardless of postoperative treatment, was 15 months (Fig. 1). At the end of 12 months, 62% of patients were alive. Survival at 24 months was 32%, and 15% at 60 months (4 patients out of 26 eligible for five-year survival). Two patients died of disease at 61 and 99 months, respectively. Two patients are without disease at 61 and 117 months.

The overall survival rate for patients with one or more peripancreatic lymph nodes histologically positive for metastatic adenocarcinoma ($n = 23$) was not significantly different from the survival for patients who had no evidence of peripancreatic lymph node involvement with tumor ($n = 28$).

No difference was seen in 30-day operative mortality or ultimate survival when patients treated at Hartford Hospital ($n = 31$) and those treated at three other regional hospitals ($n = 20$) were compared. Thirteen surgeons performed the operations. All hospitals are associated with the University of Connecticut General Surgery Residency Program, and all possessed modern surgical critical care facilities during this time period.

Twelve of the 51 patients received adjuvant radiation therapy and chemotherapy. The pancreatic bed received external beam radiation (3,960 to 5,850 cGy) over four weeks (usually broken into two-week courses). For the first three days of each two-week course of radiation, 5-FU (500 mg/M^2) was given for the first three days of each two-week course of radiation, and then at one- or two-week intervals for varying lengths of time (Table 1). The treatment was similar at all four hospitals. The adjuvant therapy regimen approximated that outlined by the Gastrointestinal Tumor Study Group.[12] Median survival of the group receiving combined adjuvant therapy was 36 months, significantly longer ($P < .02$) than patients who did not receive adjuvant therapy (Fig. 2). The median age of patients who received postoperative chemotherapy and radiation was 57 years, slightly younger than the median for the entire group (63 years).

Discussion

Pancreatic adenocarcinoma continues to present a difficult management dilemma for the surgeon. Overall survival remains poor with or without surgical treatment. This review of the more recent surgical experience in Hartford with adenocarcinoma of the head of the pancreas has allowed comparison of current 30-day operative mortality, survival statistics, and other factors associated with longer survival with that seen in our older published data. The previous review of Hartford Hospital patients who underwent resection for cure of adenocarcinoma of the head of the pancreas (1968 to 1978) reported an overall 30-day operative mortality of 9%.[10] Our current operative mortality of 4% is consistent with that experienced nationally.[1,2,5] The surgical technique of pancreaticoduodenectomy has remained largely unchanged since the development of the one-stage resection. In order to explain this difference, we postulate that the diminished operative mortality is attributable to improved intensive care management and better patient selection.

In our review, the median survival of the 51 patients was 15 months, with a five-year survival of 15% (four patients of 26 eligible for five-year survival). This study did not evaluate the survival of patients who underwent biliary and/or intestinal bypass, or those who elected not to have surgery. In other studies, the mean survival length is less than six months for observed (not operated) patients and approximately six months for bypassed patients.[1,13] Thus, extended median survival with a chance for cure, coupled with an acceptable peri-operative mortality rate, are factors which justify an aggressive surgical approach by utilizing the Whipple procedure for adenocarcinoma of the head of the pancreas.

In our experience, peripancreatic lymph node involvement with tumor did not alter survival. These data contrast other published studies.[1,5] It is generally accepted that gross extra-pancreatic tumor extension is a contraindication to Whipple resection, as the long-term cure rate is low. However, based on our review, isolated peripancreatic lymph node involvement should not be a reason to preclude resection.

No difference in 30-day operative mortality or ultimate survival was found among the hospitals involved in our review (the small number of postoperative mortalities prevents drawing statistical conclusions). Although certain authors have proposed the need for regional referral

Table 1.—Adjuvant Therapy Parameters

Age	Sex	Radiation (in rads)	5-FU (500 mg/M^2)	5-FU (q 1 week)	5-FU (q 2 weeks)	Length of Treatment	Survival (months)
44	M	4,800	X	X		8 months	61[†]
60	M	5,580	X	X		9 months	30[†]
71	M	4,518	X	X		4 weeks[*]	9
31	F	4,000	X	X		1 year	99
48	F	5,580	X	X		9 months[‡]	9[†]
40	M	4,500	X	X		1 year	51[†]
71	M	4,500	X		X	1 year	37
63	F	5,000	X		X	2 years	33[†]
73	F	4,497	X		X	11 months	12
55	M	5,850	X		X	11 months	16
62	F	3,960	X		X	1 year	13
62	F	5,070	X			*	22

*Discontinued adjuvant chemotherapy due to nausea
†Still alive
‡Ongoing treatment

centers, our data indicate that teaching facilities can provide surgical treatment of pancreatic cancer with reasonable operative mortality and survival rates. We agree that surgeon and hospital experience, coupled with critical care excellence, are crucial for operative success.

In our review, survival length was significantly longer in patients who underwent postoperative radiation and chemotherapy. Enhancement of survival with adjuvant radiation and chemotherapy was seen in the Gastrointestinal Tumor Study Group works of 1985 and 1987.[12,14] A chart review of our patients did not reveal gross differences in the performance status of patients who received adjuvant therapy and those who did not. While a selection bias toward patient referral for adjuvant therapy is possible, consistent criteria with which surgeons referred patients for adjuvant therapy could not be identified. The median age of patients who underwent combined adjuvant treatment was younger than that of those who did not receive such treatment. Age at onset of disease has not been shown to be related to months of survival.[5]

Although our data are suggestive, in this review the application of postoperative chemoradiation treatment was not standardized (that is, duration and frequency of the use of 5-FU), the number of patients treated was small, and a selection bias may have been present, precluding a definitive conclusion about the merit of adjuvant therapy for adenocarcinoma of the head of the pancreas. Clearly, additional investigation of adjuvant therapy is warranted and is the subject of current trials.

The national trend toward decreasing postoperative mortality rates and increasing survival time is supported by our review. We conclude that adenocarcinoma of the head of the pancreas can be treated safely in teaching hospitals outside major centers. The role of combined adjuvant treatment needs further elucidation, but it does show promise in prolonging survival after attempted curative resection.

Summary

The results of pancreaticoduodenectomy mortality and morbidity have declined, overall survival is increased. Whipple procedures can be performed safely in the setting of a general surgery teaching program.

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Total Clinical Laboratory Test Volume in Connecticut, 1994-1995

DWIGHT F. MILLER, M.D. AND JENNIFER J. MILLER, B.S.N.

ABSTRACT—*Objective:* To measure the volume of clinical laboratory testing in Connecticut during a one-year period. To explore the potential value of such data.
***Design:* Summary and analysis of federal and state clinical laboratory registration/licensure/inspection forms. *Setting:* 2,333 clinical laboratory test facilities registered in Connecticut.**
***Main Outcome Measures:* The total clinical laboratory output for Connecticut by type of facility and category of technology over a 12-month period.**
***Results:* During 1995, 2,333 registered clinical laboratory test facilities performed approximately 65,427,103 analyses in Connecticut. This represents approximately 20 tests per person per year. Thirty-five acute care hospitals performed 59.4%, nine large commercial laboratories 33.2%, 30 small commercial laboratories 1.7%, 1,491 physicians' offices 3.9%, and a miscellaneous group 1% of the tests. Test volumes are further segregated into eight major categories of technology: chemistry 59%, hematology 23.3%, microbiology 5.6%, blood banking 2.9%, coagulation 2.8%, waived tests 2.7%, urine analysis 1.8%, cytology 0.9%, and histology 0.8%.**
***Conclusion:* For the first time mechanisms are in place to measure essentially all clinical testing for a given area. With minor changes the data collection system could be greatly improved. The possible uses for such a data bank are discussed.**

Abbreviations Used in Text
CPT = Current procedure terminology
CLIA = Clinical Laboratory Improvement Act
HCFA = Health Care Financing Administration
OSCAR = Online Survey Certification and Report computer system
POL = Physicians' office laboratory

Introduction

THE nation's annual health bill has surpassed 14.2% of the gross domestic product and now exceeds $1 trillion.[1] A significant component of those high costs is attributed to the dependence on high technology, particularly clinical laboratory services. Yet, until recently the full scope and volume of laboratory testing could not even be measured. This was because clinical laboratory testing took place in thousands of independent test facilities, large and small, which were not centrally registered. However, in 1984 the Clinical Laboratory Improvement Act (CLIA) was enacted and then amended in 1988. This law requires an extensive profile of every facility involved in clinical laboratory testing. By combining data from the registration/licensure/inspection forms of CLIA and those required by the State of Connecticut, for the first time it is possible to measure, except for home testing, the volumes of essentially all laboratory services for a defined area and population. It is now also possible to determine the scope and nature of clinical testing by type of facility.

As the authors began this project, the preliminary question was, "considering the scope and diversity of laboratory services, is it possible to get a reasonably accurate measure of the number of clinical laboratory tests for a defined area (Connecticut) during the course of the period from mid 1994 through mid 1995?" The original concern was that the most important data, the test counts recorded

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in various licensure/inspection/registration documents of the state and federal governments, were being used for a totally different purpose than that for which they were designed. The test counts are just one of many categories of data required by government officials to help evaluate the ability of that facility to produce high quality laboratory work.

A pilot study indicated that for several reasons the data were reliable. First, essentially all hospitals and commercial laboratories representing 95% of all testing are highly computerized. Second, estimates sometimes submitted in place of actual counts by smaller facilities were felt by inspectors to be reasonable and appropriate for the type and nature of the facility. In addition, this group represents <5% of all tests so any errors would not significantly influence the total figures. Finally, those data were also consistent over several years.

Sources of Data

The data on test volumes for this study were collected from two sources:

1. Connecticut State Health Department, Application for Renewal of Laboratory Licensure/Registration.[2] These forms were used for hospital and commercial laboratory data because they are more extensive than the HCFA forms and have been in use for many years. These forms have 24 sections which in aggregate provide profiles of all aspects of the facility and operation. The forms require test volumes segregated into 58 categories, the test menus, details of quality assurance programs, test facilities, and technical equipment. They also include data not relevant to this study such as the education and the qualifications of all directors, supervisors, technical workers, etc. Specific instructions supplied with each application on how tests should be counted are as follows:

- For chemistry profiles each individual test is counted separately (ie, SMA-18 = 18 tests).
- For complete blood counts, each *measured* individual analyte is counted separately. Differentials count as one test.
- Calculations (ie, albumin/globulin ratio, automated mean corpuscular hemogloblin, mean corpuscular concentration, hematocrit, and calculation of thyroxine and triiodothyronine, quality control, quality assurance, and proficiency testing assays are not counted.
- For urinalysis, microscopic and macroscopic examinations each count as one test. Macroscopics (dipsticks) are counted as one test regardless of the number of reagent pads on the strip.
- For microbiology, susceptibility testing is counted as one test per group of antibiotics used to determine sensitivity for one organism. Cultures are counted as one per specimen regardless of the extent of identification, number of organisms isolated, and number of tests or procedures required for identification.
- In testing for allergens, each individual allergen tested is counted as one test.
- For cytology, each slide (not case) is counted as one test for both gynecologic smears and nongynecologic cytology.
- For histopathology, each block (not slide) is counted as one test each.
- For histocompatibility, each HLA typing (including disease associated antigens), HLA antibody screen, and HLA crossmatch is counted as one test.

2. Health Care Financing Administration (HCFA), Clinical Laboratory Application (HCFA form 116 [8-92]), and Clinical Laboratory Survey Report Form (HCFA form 1557 [9-92]), along with the companion Pre-inspection Personnel Report Form (HCFA form 209 [9-92]).[3] These forms, similar in nature to the Connecticut forms, have multiple sections which in aggregate profile all aspects of the facilities and operation. Test volumes, segregated into 26 different categories are required. These data are available through the HCFA Online Survey Certification and Report computer system (OSCAR).

Data Collection—Quality of Data

I. Hospital and Commercial Laboratories.

Data from hospitals and commercial laboratories were abstracted from Connecticut Health Department registration/licensing/inspection forms and transferred to spread sheets. As these data were being abstracted, previous years' data were also noted. This provided a valuable cross check as to the consistency of the data. Essentially, all hospitals and commercial laboratories are highly computerized. Some hospitals and commercial laboratories submitted computerized printouts directly. However, because institutions use different counting systems internally, many of these reports were corrected manually to comply with the required format. For example, automated test clusters, such as general health screens or organ profiles might be counted as one test or current procedure terminology (CPT) count internally. This number would be multiplied by the number of analytes in that group to comply with the directive that, regardless of the technology, each analyte would be counted as one test. Test numbers submitted by hospitals includes an unmeasured and highly variable component of outpatient work.

II. Test Facilities Other than Hospitals and Commercial Laboratories.

HCFA divides test facilities into 22 categories. All data on facilities other than hospitals and commercial laboratories were abstracted from HCFA data. These data are

Table 1.—Clinical Test Volumes by Type of Facility and Laboratory Division

Tests	35 Hospitals	9 Large Commercial Labs	30 Small Commercial Labs	1,491 Physician Office Labs*	793 Other Facilities	Totals
Microbiology	2,251,392	1,008,916	41,258	354,150	50,794	3,706,510 (5.7%)
Hematology	9,921,183	4,140,513	287,069	735,906	171,976	15,256,647 (23.3%)
Blood Banking	1,110,268	60,268	2,200	3,436	18,134	1,914,306 (2.9%)
Chemistry	22,429,977	15,333,990	750,816	11,201	73,202	38,599,186 (59%)
Coagulation	1,572,772	259,456	27,099	ND3	ND	1,859,327 (2.8%)
Urine Analysis	778,007	312,978	21,299	31,717	18,838	1,162,839 (1.8%)
Cytology	317,505	328,282	0	0	0	645,787 (.9%)
Histology	373,640	176,002	0	0	0	549,642 (.8%)
Waived Tests #2	N/A	N/A	N/A	677,444	219,008	896,452 (1.4%)
Waived Tests #4	N/A	N/A	N/A	755,515	80,892	836,407 (1.3%)
Totals Percentages	38,754,744 (59.4%)	21,620,405 (33.2%)	1,129,741 (1.7%)	2,569,364 (3.9%)	632,844 (1%)	65,427,103‡

* 865 POL (physicians' office laboratory) did waived tests only.
† 623 other facilities did waived tests only.
‡ Because of rounding off, does not equal 100%.
** ND, no data

available through OSCAR searches and were augmented by personal communications with government inspectors. All of these small facilities, which include doctors' offices, school infirmaries, extended care facilities, municipal clinics, etc., have been inspected at least twice. While the inspectors' focus was not the test volume, it was felt that the nature and volume of tests reported was appropriate for the resources and situation: for example, dermatologists doing KOH preparations, oncologists doing compete blood counts, pediatricians doing throat and ear cultures, etc. Test volume ranges were also checked against billing schedules, a graduated fee schedule determined by test volume.

Waived Tests.—CLIA regulations divide all tests into two groups. The first group, designated "waived" tests, consists of some 20 relatively simple procedures. Those laboratories which limit their testing only to tests from that list are excluded (waived) from further regulations and inspections. The waived test group is itself further subdivided into two subcategories, designated category 2 and category 4. Category 2 tests include urine dipsticks, occult blood detection, spun hematocrits, etc. Category 4 tests are all based on microscopy and include such procedures as urine sediment microscopy, KOH preparations for fungi, quantitative sperm counts, etc. All data on waived tests were abstracted from OSCAR files. However, because of incomplete information in the data base, the test count has been adjusted as follows. For category 2, the total of the 923 facilities which did report test volumes was increased by 18% to compensate for the 202 facilities (18%) that did not provide adequate data. Likewise for category 4, the total volume of the 219 facilities which did report test volumes was increased by 37% to compensate for the 128 facilities (37%) which did not provide adequate data.

The nature and extent of physicians' office laboratories (POL) activity was analyzed in greater detail through the OSCAR data base augmented by inspectors comments.

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These data summarizing the activity of 1,491 POL facilities are recorded in Table 2. The number of physicians using these facilities is not available.

Demographics.—In order to facilitate the interpretation of the data, the population and the number of physicians ordering tests was obtained. According to the Connecticut Health Department, the population was 3,274,662 in 1995.[4] According to the State Medical Society, there were 1,800 physicians in postgraduate training programs and 6,600 clinicians in active practice.

Finally, during the period of this study the laboratory field was in a state of flux. As a result there was a continuous stream of minor changes noted in the database over several months. The number of facilities changed through openings, closings, consolidations, etc. The test volumes and menus also changed slightly as relicensure/reinspection forms were received.

Results

The test volumes by type of facility and major category of technology are summarized in Table 1. The 35 acute care hospitals performed about 59% of all tests. A variable number of these tests are from outpatients, physicians' offices, nursing homes, etc., so that no inference can be drawn about inpatient testing. The commercial laboratories did 35% of all testing but this figure may be artificially low. This is because only those tests actually performed at facilities located within Connecticut are supposed to be counted. Specimens sent to facilities out of state should not be counted. Of the 6,600 clinicians in active practice, 1,491 (23%) registered with CLIA to do office testing. The majority of these, 865, did waived tests only. Nonwaived tests performed at POLs were studied in greater detail and are summarized in Table 2. In aggregate the POLs did less than 4% of all testing. The 793 remaining facilities which did 1% of the testing were very diverse. This group included 260 skilled nursing facilities, 108 home health agencies, 70 school or student health facilities, 34 community clinics, 28 industrial facilities, 23 nonphysician practitioners, plus a miscellaneous group, ie, health fairs, mobil units, pharmacies, and satellite facilities of hospital and commercial laboratories that handle a large numbers of specimens but do only limited testing on site. The test count is also broken down by technology with 59% of analysis chemical by nature and the rest as noted.

If one adds the 1,800 physicians in postgraduate training to the 6,600 clinicians in practice, the average physician ordered about 7,900 tests per year. With a population estimated to be 3,274,662, the average citizen had almost 20 tests. It is important to remember that the count is for each specific test, ie, a general health screen might be 18 tests, an automated CBC, 8 tests.

The analysis of the types of tests done in doctors' offices, augmented by inspectors' comments suggests that many are performed for immediate decision-making information or practicality.

Table 2.—Physicians' Office Laboratories Performing Nonwaived Tests

Test Category	No.	Tests	Inspectors Comments
Microbiology	356	325,711	Mostly streptococcus screens, urine colony counts
Mycology	37	15,468	Dermatologists, superficial fungi
Parasitology	2	1,329	Infectious disease, internists, intestinal parasites
Virology	3	692	Infectious disease, internists, influenza kits
Syphilis Serology	1	348	
General Serology	73	21,965	Internists, allergists, infections, mono, rheumatoid factor, IgE
General Chemistry	145	701,711	Internists, glucose, electrolytes, thyroid, renal, lipid screens
Urine Analysis	25	31,717	Internists, urologists, OB-GYN, primary physicians
Endocrinology	3	18,180	Internists, thyroid studies
Toxicology	2	728	Drug level, Theophyllines
Hematology	195	722,649	Chemotherapists, primary physicians, general surgeons
Immunohematology	1	3,436	OB-GYN, blood groups, type
	843*	1,843,934	

*626 POL, 217 performing tests in two or more categories

Discussion

This study had two goals. The first was to explore whether there is a relatively simple way to measure the scope and volume of laboratory services for a defined area. The second was to explore how these data might be used, especially if made more complete and more highly refined. The first question can clearly be answered in the affirmative. The test menu and test count, although a small component of present registration/licensure/inspection forms does provide a relatively simple, inexpensive way to monitor laboratory utilization on a macro scale. Further, as will be discussed below, this data bank could be greatly improved with little additional effort if more complete data on test menus and volumes were collected.

However, the fact that accurate data on laboratory utilization could be available does not necessarily mean it should be collected. Rather it raises the question, would the data be useful and to whom? Since the data are "macro" in nature, covering wide geographic areas and large populations, it might benefit those in health planning and finance. Certainly those involved in negotiating capitation contracts, setting rates or industries evaluating potential markets should feel more comfortable with firm numbers rather than soft estimates. In addition, if the data were collected over several years they would help define trends and perhaps take on predictive values.

On the other hand the data would probably be of little use to those operating in a "micro" environment. Raw numbers say little about quality of care. They do not say if the tests were useful or wasteful. The numbers cannot be used as indicators to tell if the results supported a diagnosis or ruled out disease. These questions can only be answered by case reviews. Neither can these data be used to evaluate ordering practices or physicians' utilization profiles. For these purposes a number of well tested software programs are available.

The database of test volumes by laboratory section analyzed in this study was required by government agencies in order to help them evaluate the potential of that facility to do quality work. It serves that function well. When summarized it also provides new insight into the volume and scope of all types of test facilities. However, further analysis beyond the scope of what is presented here is severely limited because of the way the tests are counted and summarized. First, the test counts are for each analyte regardless of the technology employed. Yet many tests are ordered, produced, billed, and paid for in clusters such as health screens, panels, or organ profiles. This significantly inflates the test count, especially when compared with studies based, for example, on CPT codes. The second major weakness is that, in grouping tests by technology, any opportunity for detailed analysis is lost.

For those in health planning and finance on a macro scale or perhaps those in industry, a test count system based on CPT codes is published annually.[5] This data base is inherently more accurate and detailed. Unfortunately, the studies are based only on Medicare, Part B, which covers only outpatient work. This is a small sampling and the assumptions by which the data are extended to estimate the full scope of laboratory activity is subject to challenge. According to the current G-2 studies, the total laboratory bill for the nation was estimated to be $35,043,888,500 in 1993 for 4,250,073,736 tests. This is less than 5% of the nation's total health bill. If, after consideration of interested parties, having detailed accurate data of test volumes and menus on a macro scale were deemed useful, a pilot study might be instituted at three or four sites, modeled after the National Cancer Institute's Surveillance, Epidemiology and End Result reporting program (SEER). In this program very detailed data are collected on all aspects of oncology within several carefully defined areas. These data should provide the benchmarks for references for areas not studied.

Acknowledgment

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Reducing the Inappropriate Utilization of Clinical Laboratory Tests

ALAN H.B. WU, PH.D.

ABSTRACT—Reimbursement policies for health-care services in Connecticut and the U.S. have gradually shifted towards fixed reimbursements through implementation of managed care. As a result, there is an increasing need by physicians and other care givers to reduce costs without compromising the quality of the care being delivered. The clinical laboratory is one area where significant cost reductions may be realized. More effective utilization can be accomplished with the elimination of panels of tests, such as the general chemistry profile, removal of antiquated tests or those that provide redundant information, judicious use of drug assays, acceptance of clinical practice guidelines, and use of reflex testing algorithms. Physicians should also focus more on prognostic indicators for disease prevention. Point-of-care testing devices which have higher costs than incremental central laboratory expenses should be used only if it reduces overall operating expenses, as assessed by outcomes analyses. New technologies such as DNA probes can substantially improve diagnostic efficiency. Physicians and clinical laboratories must collaborate to achieve more efficient utilization practices.

Abbreviations Used in Text
SMAC = sequential multiple analyzer—continuous flow
PSA = prostate specific antigen
LDH = lactate dehydrogenase
TCA = tricyclic antidepressants
TDM = therapeutic drug monitoring
AHCPR = Agency for Health Care Policy and Research
LOS = length of stay
EIA = enzyme immunoassay

ALTHOUGH the Clinton administration failed in passing significant legislation with regards to health-care reform, dramatic changes nevertheless are occurring. The impetus for reform stems from the fact that 1) the U.S. lacks universal health-care coverage, 2) costs have escalated dramatically in the last few decades (currently 14% of the gross national product as compared to 7% to 10% for other developed countries), and 3) the quality of care is not clearly superior to that in many other western nations.[1] In efforts to reduce the costs for providing basic medical services, many employers have switched coverage of their employees from an indemnity plan (ie, fee-for-service) to a managed medical care plan. At the end of fiscal year 1995, health maintenance organizations in Connecticut had a penetrance of 34%, placing it in the top 10 states nationwide.[2] Discounted and capitated reimbursements have created a need by physicians to reduce costs for providing basic services. The state has also switched to managed Medicaid, and managed Medicare plans are being developed. Managed Medicaid programs have been successful in Arizona where $100 million was saved over the traditional program.[3]

Controlling the utilization of clinical laboratory services is one area by which reductions in costs may be realized. Test utilization has traditionally been higher in the U.S. than in other countries such as Japan and Europe.[4] Access to emergent (stat) laboratory services in hospitals in these countries is more restricted, especially during off hours. Nevertheless, the quality of health care does not appear to be adversely affected. There are several ways by

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Table 1.—Elimination of Redundant or Antiquated Tests

Old or antiquated test	New or preferred test	Disease indication
Prostatic acid phosphatase	Prostate specific antigen	Prostate cancer
Amylase	Lipase (with co-lipase) or pancreatic amylase	Acute pancreatitis
Serum folate	Red cell folate	Macrocytic anemia
Iron, total iron binding capacity	Ferritin	Microcytic anemia
Aldolase	Total creatine kinase	Skeletal muscle disease
Creatine kinase—MB	Cardiac troponin T or I	Acute myocardial infarction
Lactate dehydrogenase isoenzyme	Cardiac troponin T or I	Late indication of myocardial infarction
Lactate dehydrogenase		Provides little information for liver disease
Chloride		Rarely provides additional information to an electrolyte profile

Table 2.—Areas for Reflex Testing

Screening Test	Reflex test
Hepatitis antibody tests	Hepatitis IgM antibody tests
HIV ELISA	HIV Western blot
Serum electrophoresis	Immunofixation electrophoresis
Cholesterol	Lipid profile
Thyroid stimulating hormone	Free thyroxine
Hematocrit/mean corpuscular volume	B^{12}, red cell folate, ferritin
Urinalysis (dipstick)	Urinalysis (microscopy)

which primary physicians can reduce the ordering of laboratory tests and still obtain the data needed to make effective therapeutic decisions. Some of these strategies are discussed in this review.

Elimination of Multiple Analysis Panels or Profiles

Multiple testing was created with the development of automated "continuous flow" chemistry analyzers. For instruments such as the Technicon sequential multiple analyzer–continuous flow (SMAC), the costs for providing many tests was identical to the cost of providing one test, because irrespective of the number of tests ordered, reagents were continuously fed through the analyzer.[5] Thus for screening healthy individuals, manufacturers and for-profit reference laboratories promoted the concept that "more is better." Modern clinical instrumentation operates under a "random access" mode, ie, any combination of tests can be assayed on a given specimen. Therefore from an analytical view, there is an additional (albeit minor) laboratory expense for testing and reporting results of the extra unnecessary tests ordered on a profile. As such, Medicare no longer reimburses general multiple test panels that are not organ specific.[6] This policy took effect on 1 March 1996.

Table 3.—Examples of Useful Point-of-Care Testing Devices

Analyte	Clinical indications
Glucose	Regulation of insulin dosages
hCG	Pregnancy detection
Drugs of abuse	Emergency detection of drug overdosages
Strep A, *H. pylori*, etc.	Infectious diseases
CK-MB, troponin T, I	Acute myocardial infarction

Regardless of costs, the clinical usefulness of profile testing of healthy individuals for detection of occult disease has been questioned since its inception over 20 years ago.[7-9] For an effective screening program, there must be a balance between the number of new previously unknown cases found (true positives) and the number of false indications of disease (false positives). A positive result requires a follow-up examination and confirmation tests which greatly increase costs and add to the inconvenience and stress to the patient. Previous studies showed that the majority of abnormal chemistry results were caused by hyperlipidemia, diabetes mellitus, and liver disease,[7] many of which were previously known.

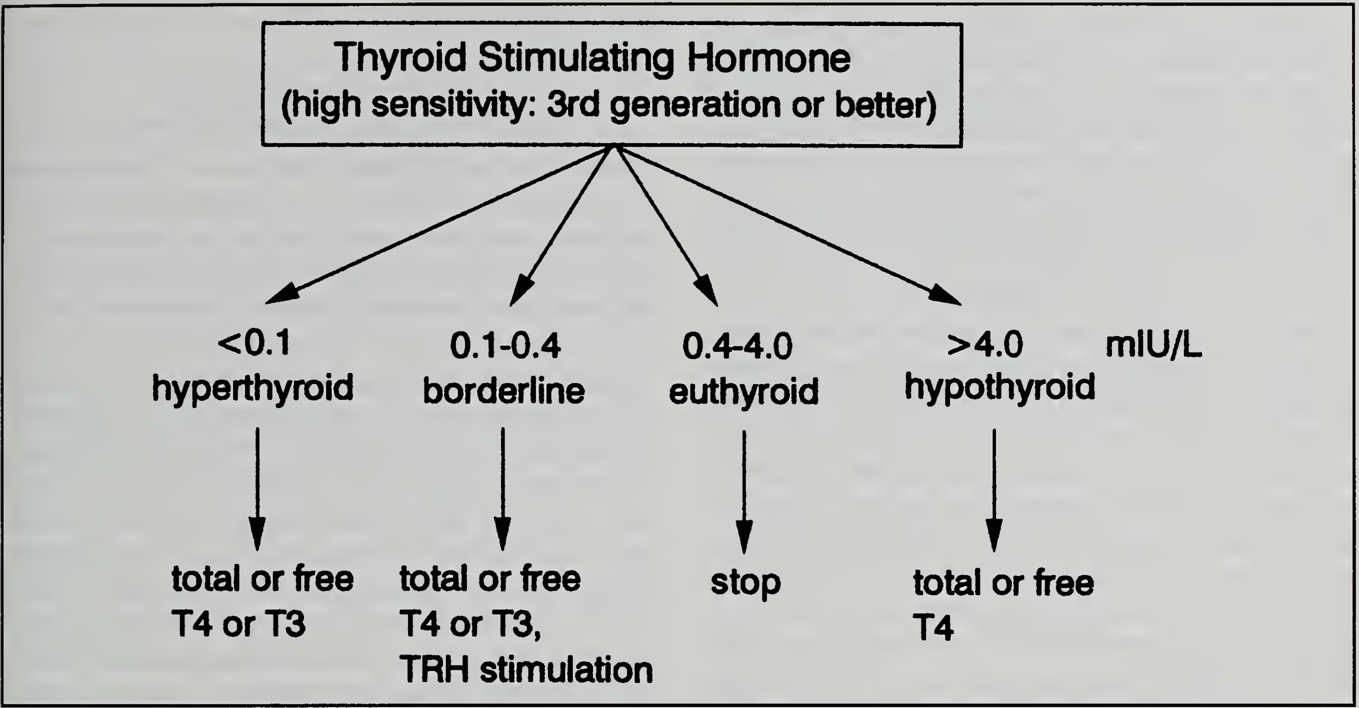

Figure 1.—Reflex algorithm for thyroid function tests. The use of an ultra-high (third-generation) TSH assay is the screening test for these disorders. (From Klee et al, *J Clin Endocrinol Metab* 1987; 64:461-71).

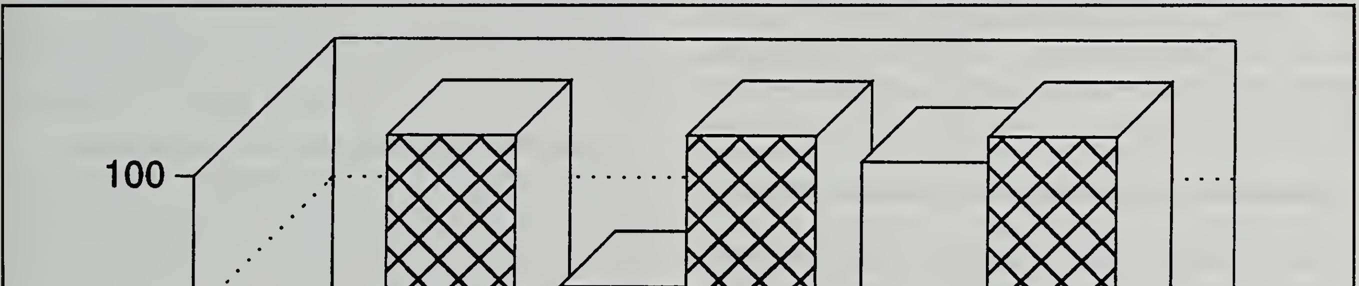

Figure 2.—Comparison of *Chlamydia* tests on cervical swab cultures and first void urine. Clinical sensitivity: clear, specificity: shaded. (From Chernsesky et al, *J Clin Microbiol* 1994; 32:2682-5).

False positive results occur in several ways. First, the reference range by convention is set to include only 95% of a normal population. Therefore, the higher number of tests ordered, the higher statistical frequency that one of the tests will be abnormal in a subject who has no disease. For a 25-test profile, there is only a 28% chance that a healthy individual will have all of her tests within the normal range.[10] If the prevalence of a disease detected by the test in question is low, a high percentage of abnormal screening test results will erroneously indicate disease presence. A screening test is most useful when applied to populations identified as high risk. The precision (reproducibility) can also affect the false positive rate. Some tests, such as that for creatinine, are inherently imprecise and spurious results can lead to false positives. Because of the inherent problems of using a reference range that is based statistically on results of normal individuals, the best way to determine the presence of abnormality is to monitor intra-individual trends, ie, compare new results against previously tested samples from the same patient. The variability of results for one subject is lower than the variability between subjects. Laboratory computer systems cannot today keep long-term records on subjects, thus primary-care physicians should routinely compare new results against previous records. Automatic use of intra-individual normal ranges may become a reality in the future, as hardware prices for memory and recall continue to decline.

Elimination of Redundant and Antiquated Tests

The laboratory *in vitro* diagnostics industry continues to improve and develop new laboratory tests, although no longer at the same rate as in years past. In the field of cardiac markers, new assays include myoglobin, creatine kinase MB isoforms, cardiac troponin T, and cardiac troponin I.[11] Emerging tumor markers include CA 15-3, CA 19-9, free prostate specific antigen (PSA), neuron specific enolase, cathepsin D, squamous cell carcinoma antigen, telomerase, and others.[12] With availability of new tests, it is important to abandon older tests that are not as useful, or provide redundant information. For example, PSA testing should be used to the exclusion of prostatic acid phosphatase for the monitoring of prostate cancer. Serum lipase and amylase provide redundant information for acute pancreatitis, and one or the other but not both should be used. Lactate dehydrogenase (LDH) isoenzymes and possibly CK-MB can be replaced with cardiac troponin T or I. Total LDH could be removed from a liver panel without loss of diagnostic information, as it is a nonspecific test. Table 1 lists examples of new tests that have replaced older ones. Although in some cases, the new test may be more expensive (eg, ferritin), the overall costs for misdiagnosis or inappropriate use of follow-up tests may outweigh the lower cost of the older test (eg, serum iron).

Limit Use of Toxicology and Therapeutic Drug Monitoring Assays

Assays for drugs of abuse have become a major part of the management of emergency department patients, and therapeutic drug monitoring has become important for outpatient compliance and toxicities. Knowledge of how drug assays are performed and their limitations may be helpful in the efficient utilization of these tests.

Drugs of abuse testing is conducted on urine typically in two steps. Results of screening assays are available on a stat basis, but in most cases they only provide presumptive evidence of drug use (ie, identifying a class of compounds that may be present). Because screening assays have false positives, confirmation assays are used to provide definitive information as to the specific drugs present in urine. Assays, such as gas chromatography/mass spectrometry, however, are labor intensive and results are not available in real time (ie, when critical decisions in the emergency department are made). Thus, their use should be limited to cases that may have medicolegal significances.

Knowledge of drug abuse patterns can be useful in ordering the right drug test. Instead of ordering a broad panel that includes all drug classes, a specific panel of either stimulants and depressants should be ordered to match the clinical presentation. Knowledge of the prevalent drug use locally can also be helpful to reduce utilization. Phencyclidine, methaqualone, and the amphetamines are drugs that are rarely abused in Connecticut; thus, unless there are specific clinical indications that suggest their use, they should not be ordered as part of an emergency drug screen panel. Although marijuana is widely used, it does not produce acute clinical problems; thus emergency department testing for this drug is also of questionable value. On the other hand, cocaine, opiates, benzodiazepines, barbiturates, and tricyclic antidepressants (TCAs) are important drug classes and should be tested for when symptoms are present. Positive results for TCAs should be interpreted with caution, as non-TCA drugs such as cyclobenzaprine have a similar structure to true TCAs and produce false positive results.

Therapeutic drug monitoring (TDM) of serum is important for some chronic diseases such as asthma, epilepsy, arrhythmias, and depression. If there is a question of whether a patient is compliant to his dosing regimen, TDM testing can provide objective evidence. Although TDM has been practiced for many years, some have recently questioned its utility. In a study of anticonvulsant drugs by Schoenenberger et al, 73% of requests for drug levels were deemed to be inappropriate.[13] Sampling errors accounted for the majority of the inappropriate tests. In other requests for therapeutic levels, retrospective chart review showed the lack of clinical or pharmacologic justification (eg, presence of seizures or dose-related drug toxicity). If TDM is to be performed, careful attention must be paid to the correct sampling time after dosing. Otherwise TDM results may be misinterpreted.

For some drugs, new dosing approaches may reduce the need for TDM. Aminoglycosides such as gentamicin are widely used for gram-negative infections among hospitalized patients. These drugs are highly nephrotoxic, thus therapeutic monitoring has become standard practice. Previously, it was thought that aminoglycoside drug levels in blood should fall within very narrow limits. Drugs were given every eight hours with regular monitoring of peak and trough concentrations to achieve optimum concentrations. It was recently shown, however, that more efficient bacteriocidal activity is achieved when very high drug concentrations are produced. Toxicities do not develop because the antibiotic is given only once daily, and there is less drug accumulation. An evaluation of this new dosing strategy has led to a reduction in the need for therapeutic monitoring.[14] Primary-care physicians and specialists must repeatedly evaluate their needs for therapeutic monitoring of their patients. If a patient has been compliant and the dosing appears to be efficacious without signs of untoward side effects, regular therapeutic drug monitoring may be unnecessary.

Endorsement of Clinical Practice Guidelines

Clinical practice guidelines have been established for particular diseases to assist clinicians and other health-care personnel to maintain consistency of clinical practice. Offices and organizations such as the Agency for Health Care Policy and Research (AHCPR), the American College of Physicians, and others conduct research and prepare practice guidelines based on recommendations of leading physicians and researchers in the field.[15] These recommendations are for the use of health-care providers and for general public education. They were designed to reduce variations in clinical practice, improve the quality of health care, and lower costs by reducing the utilization of services.[16] When the guidelines are followed for appropriate patients, there may also be some degree of legal protection against malpractice.[17] Outcomes analyses showed that implementation of practice guidelines can produce reductions in costs and hospital lengths of stay (LOS). For example, in a study by Weingarten et al, adherence to a clinical practice guideline for chest pain patients reduced the LOS from 3.54 to 2.63 days, and reduced expenses of $1,397 per patient.[18]

Many clinical practice guidelines include recommendations for the effective use of clinical laboratory services. The AHCPR guideline for management of sickle cell disease in newborns recommends use of some laboratory tests for diagnosis (eg, electrophoresis) and abandonment of others (eg, solubility tests).[19] In the study by Wachtel et al, institution of 14 different practice guidelines led to an overall reduction of 20.6% for laboratory tests, 42.3% for chest x-ray films, and 34.2% for electrocardiograms without adverse clinical effects.[20] New clinical practice guidelines and revisions of existing ones are expected.

Use of Reflex Testing

Reflex testing refers to the ordering or canceling of one test based on the result of another. There are many examples in the clinical laboratory where reflex testing can be and is used today to alter the costs of providing basic services (Table 2). For example, a negative result for hepatitis B core antibody precludes the need to order the IgM core antibody test. A Western blot confirms a positive ELISA screen for HIV. Immunofixation electrophoresis is only performed if there is a monoclonal band on a serum protein electrophoresis gel. In other areas, a more complex algorithm may be necessary to funnel patients into the appropriate steps. For example, the National Cholesterol Education Program has established an algorithm based on total cholesterol that guides physicians to the appropriate follow-up tests such as the lipid profile.[21] Use of new lipid markers, such as apolipoprotein B and Lp(a), may eventually become a part of these algorithms. Screening patients for thyroid disease by testing for thyroid stimulating hormone has been proposed. The algorithm of Klee et al is shown in Fig. 1.[22] If algorithms such as these can become accepted as standards of practice, formal arrangements between the laboratory and physician can be made to enable the testing to follow a specific pattern based on preliminary results.

Emphasis on Prognostic Markers

In a capitation environment where a clinical practice is contracted for a fixed reimbursement per month, based on the total number of persons covered by the program, there is incentive to minimize the number of office visits by participants. As such, there is a renewed interest in developing preventative medicine programs to maintain health. Identification of high-risk individuals with subsequent therapy may ultimately reduce hospital admissions and costs. There are several areas where biochemical markers play a role in risk stratification. The most widely used tests today include tests for cholesterol and lipoprotein such as cholesterol, HDL and LDL cholesterol for assessment of risks for cardiovascular disease.[23] Screening programs will continue to play a major role in the managed-care era. New lipid markers such as apolipoprotein B and lipoprotein (a) are being studied to define high-risk groups. Apolipoprotein B is more strongly associated with coronary artery disease than LDL cholesterol.[24] Lp(a) is an independent genetic risk factor for atherosclerotic vascular disease. Although drugs such as niacin have been shown to lower Lp(a),[25] it remains to be determined if such therapy is effective in lowering cardiovascular risks.

Other cardiovascular markers have being studied for specific diseases. Cardiac troponin T and I are structural proteins of striated muscle and are released following injury to the heart. Unstable angina patients seen in the emergency department with abnormal concentrations of these proteins have about a five-fold higher short-term (< six months) risk for acute myocardial infarction or cardiac death than those patients who have a normal cardiac troponin.[26] Identification of these high-risk groups may prompt a need for revascularization. Mutations in the coagulation factor V gene is another marker being examined for risk stratification. A point mutation in this gene is associated with resistance to degradation of factor V by activated protein C, thereby predisposing individuals to venous thrombosis and pulmonary embolism.[27] Will prophylactic treatment with anticoagulants for high-risk individuals be useful to reduce the incidence of life-threatening thrombotic events? This issue is now being addressed prospectively in clinical trials.

Judicious Use of Point-of-Care Testing

Laboratory technology has progressed to the extent that hand-held "point-of-care" (POC) testing devices are now available for a wide menu of analytes. These devices are designed to deliver results with a rapid turnaround time without substantial investment in equipment, and can be operated by the primary caregivers without requiring extensive training. Table 3 lists some POC tests that have been successfully used in clinical practice. On a unit cost basis, POC testing devices are more expensive than the incremental costs incurred for laboratory-based testing.

In an era of capitated reimbursements, decisions on the implementation of POC devices must be made judiciously. For outpatients POC testing may be cost-effective if there are reductions in turnaround times to enable physicians to make important management decisions while the patient is still in the office. For inpatients, POC testing may be useful for critical tests that are not available on a stat basis from the central laboratory. However, turnaround time is not the ultimate criterion for usefulness of POC. In one study, implementation of POC devices for glucose and an electrolyte panel in an emergency department resulted in an increase in costs of between 1.1 to 4.6 fold over the central laboratory.[28] In a study of nearly 5,000 emergency department patients, implementation of POC testing for stat electrolytes, glucose, and creatinine reduced turnaround time(s), but had no effect on overall emergency department length of stay.[29] This study suggests that the concept that lowering laboratory turnaround times for critical tests will improve patient outcomes may be erroneous. More devices will undoubtedly be developed and released in future years. Their use will need to be critically evaluated using outcome measures of cost and clinical effectiveness.

Implementation of New Approaches and Technologies

Technologies for diagnostic testing continue to develop even though the overall rate of new developements in the diagnostics industry has declined due to diminishing reimbursements to laboratories. There will be roles for new and innovative approaches in laboratory medicine that improve diagnostic accuracy, or enable testing to be accomplished more efficiently or cost effectively. An example in the area of inpatient testing is the analysis of amniotic fluid for fetal lung maturity. The most widely accepted procedure is measurement of the lecithin-to-sphingomyelin ratio, a five-hour, thin-layer chromatography test.[30] It was recently discovered, however, that fetal lung surfactants are secreted by type II pneumocytes in the form of lamellar bodies.[31] Instead of biochemically measuring the lipids, these lamellar bodies can be counted on conventional blood cell counters. In this way, an assessment of fetal lung maturity can be made rapidly (under 10 minutes) without reagent costs, and with an instrument that is already available in all clinical laboratories. Use of this test has greatly reduced turnaround times and increased availability of results for immediate patient management.

Recent developments in DNA technology have also led to improvements for the diagnosis and prognosis of cancer, genetic, and infectious diseases. The development of DNA amplification methods such as the polymerase chain reaction has enabled detection of trace amounts of genetic material present in a clinical sample. For infectious diseases, matching probes with viral or bacterial DNA sequences have led to development of rapid and specific assays. For example, routine microbiologic cultures of urethral and endocervical swabs for *Chlamydia trachomatis* require a minimum of 48 hours. Although the specificity is 100%, the sensitivity of cultures is low (Fig. 2).[32] Enzyme immunoassays (EIA) for detection of *Chlamydia* antigens can be performed in a few hours and significantly increase the clinical sensitivity of results. However, high clinical sensitivities approaching 100% can be achieved through amplification of *Chlamydia* DNA. Using ligase chain reaction, DNA probes can also be used on first-void urine samples, which is more convenient than collecting a cervical specimen. Although the costs of ligase chain reaction probe assays may be initially higher than EIA, the increased diagnostic accuracy may outweigh the additional expenses. In future years, many other DNA assays will become available and change the way traditional tests are performed. They will likely have a major effect on clinical outcomes and costs.

Summary

It is important to recognize that laboratory tests contribute only a small percentage of overall operating costs for an individual or group practice, or a hospital or medical center. In many cases, ordering more of the "right" tests may ultimately lead to a reduction of expenses. Irrespective of how laboratory tests are used, primary-care physicians and specialists must adapt to changing practices that may limit the availability of resources.[33] Clinical practice guidelines are helpful where applicable, but cannot supersede clinical judgment. As managed care continues to increase over the next few years, reducing inappropriate utilization of services becomes more necessary.

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A Case Report: Recurrent Vestibular Schwannoma

DAVID P. NEUMANN, M.D., HELEN M. KELLET, M.D.,
AND DAVID M. WAITZMAN, M.D.

VESTIBULAR schwannoma (acoustic neuroma, acoustic neurinoma) is the most common tumor of the cerebellopontine angle (CPA) cistern.[1,2,3] These lesions usually present with sensorineural hearing loss and/or tinnitus. While malignant degeneration is rare, regrowth of the tumor may occur if it is incompletely excised.[1] We report a case of recurrence of a vestibular schwannoma approximately three years after initial surgery.

A 46-year-old man first presented with severe right sided sensorineural hearing loss and right facial twitching in early 1993. A vestibular schwannoma (VS) was removed which was noted to be involving both the seventh and a portion of the fifth cranial nerves. Following surgery, the patient had complete loss of hearing on the right side. He underwent a second operation for facial asymmetry during which an anastomosis was constructed between the hypoglossal and facial nerves. This procedure was only partially successful and he was left with atrophy and weakness of the right side of the tongue and some facial numbness.

The patient was recently seen at our institution complaining of progressive blurred and double vision, particularly on horizontal and distant gaze that had been present for three months. He denied any vertical diplopia, gait disturbance, vertigo, swallowing difficultly, extremity weakness or numbness, or change in urine or bowel habits. Physical examination revealed a well-nourished individual with complete absence of hearing on the right side and complete atrophy of the right side of the tongue. Neuro-opthalmological examination revealed decreased abduction of the right eye with moderate right ptosis and incomplete closure of the right eyelid. Together with abnormalities elicited on cover/uncover testing, the findings were felt to be consistent with a right sixth nerve paresis.

Magnetic resonance imaging (MRI) showed a large well-defined soft tissue mass occupying the right CPA, markedly widening the internal auditory canal (IAC), and displacing the pons and basilar artery to the left (Fig. 1a - 1d). The lesion exhibited signal intensity similar to grey matter on precontrast T1 weighted images and intense, near homogeneous enhancement following injection of gadolinium contrast medium. Imaging findings were highly suggestive of a vestibular schwannoma, which was confirmed at surgery.

Discussion

Vestibular schwannoma is the most common tumor of the CPA and the IAC, accounting for approximately 80% of all tumors found in this region, and five to 10% of all primary neoplasms.[1,2] Commonly referred to as acoustic neuroma, vestibular schwannoma is a more appropriate term since the tumor arises from Schwann cells and the vast majority (85%) of these lesions originate from the superior or inferior vestibular segment of the vestibulocochlear nerve.[1,2,3]

From autopsy studies, it has been estimated that 1% of all individuals harbor an acoustic schwannoma, but the frequency of symptomatic lesions is much smaller.[4] Most patients with a vestibular schwannoma are in their fifth or sixth decade of life at the time of diagnosis, when they usually present with progressive unilateral sensorineural hearing loss and tinnitus.[1,2,3] Although the vestibular portion of cranial nerve VIII is the site where most of these

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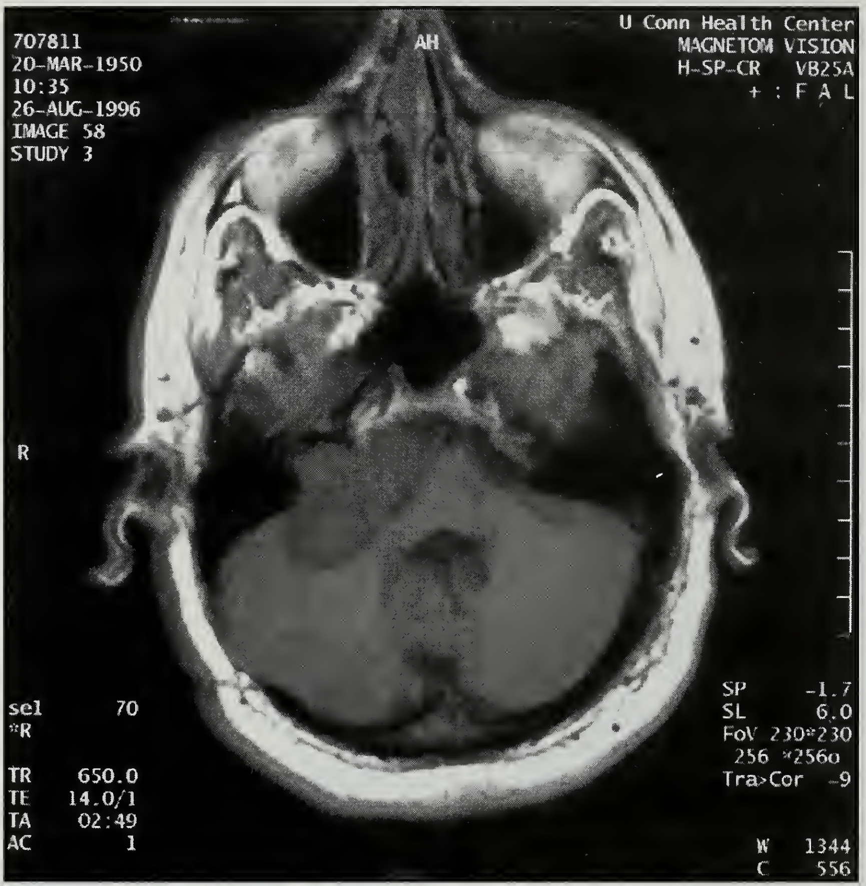


Figure 1a.—Axial T1-weighted precontrast image shows mushroom shaped lesion hypointense to cerebellum, with smaller intracanilicular and larger cerebellopontine angle cisternal component.

lesions arise, symptoms of dizziness and dysequilibrium are not commonly seen.[2] Sudden onset of unilateral hearing loss has been attributed to intratumoral hemorrhage.[2,3] Large tumors may by direct extention and mass effect result in dysfunction of other cranial nerves (as in our case), cerebellar symptoms, and obstructive hydrocephalus.[1,2]

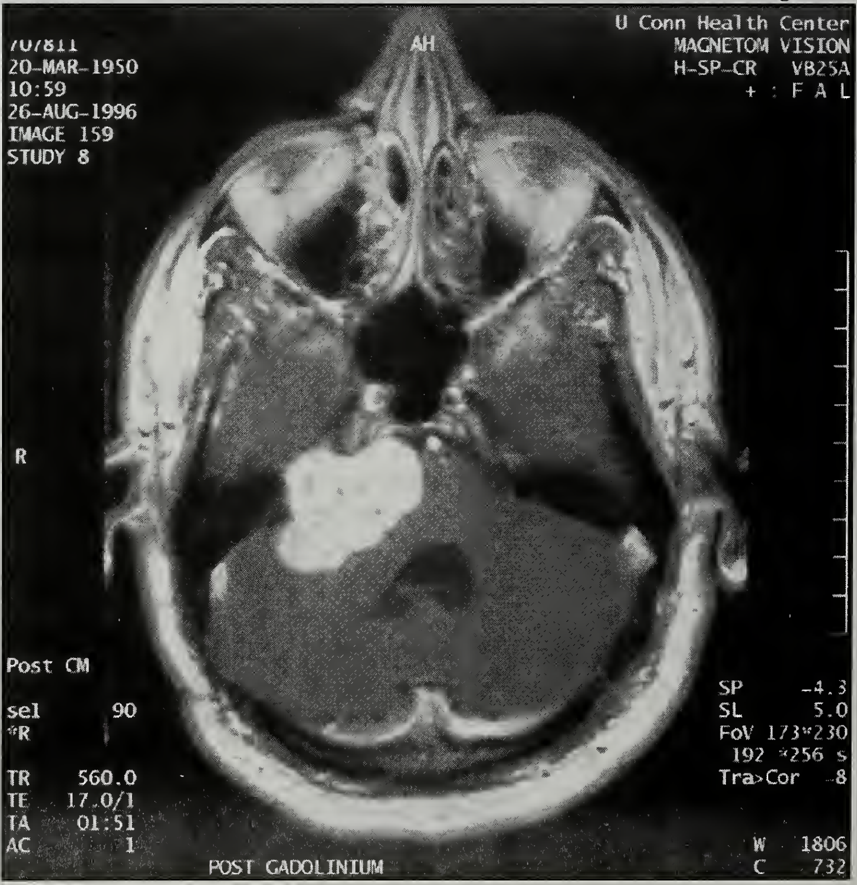
Vestibular schwannomas usually arise at the porus acousticus of the IAC, where the junction between glial cells and Schwann cells is found.[1,2,3] However, these tumors may occur anywhere along the course of the vestibulocochlear nerve, and rare intralabyrinthine schwannomas have been reported.[4]

MRI is the diagnostic modality of choice in patients suspected of having a VS due its superior soft tissue contrast and multiplanar capability.[2,3] Completely intracanalicular VS that do not expand the IAC can be difficult to detect on computed tomography.[5] Since these tumors characteristically enhance intensely following intravenous injection of paramagnetic contrast material, T1 weighted post-contrast MR images are most useful and can demonstrate lesions only several millimeters in size.[2] We routinely employ fat saturation techniques to improve contrast between the lesion and surrounding tissues.

MRI typically demonstrates an extra-axial mass with intense, uniform enhancement centered at the porus acousticus.[2] Lesions entirely within the IAC are small and elongated while those with a CPA cisternal component take the shape of an ice cream cone; the cone being the intracanilicular portion and the ice cream the cisternal part.[1,2] In our case the large recurrent mass completely filled the cistern, and markedly widened the IAC, resembling a mushroom.

The presence of bilateral acoustic schwannomas is highly suggestive of neurofibromatosis type 2.

Figure 1b



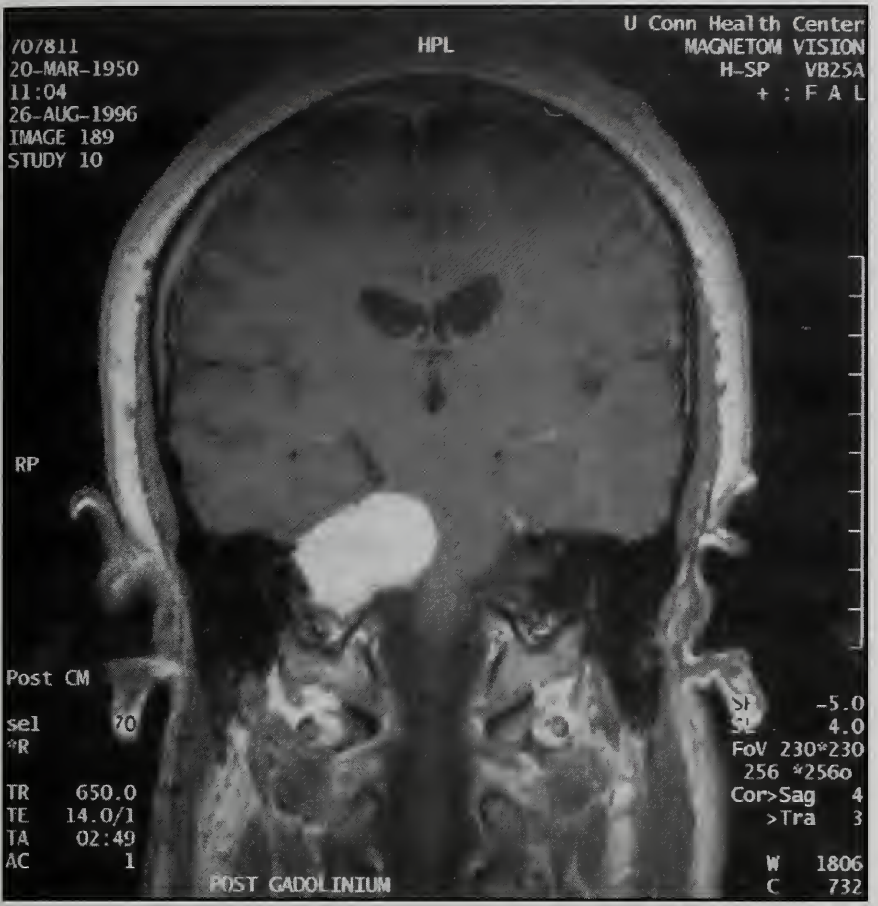
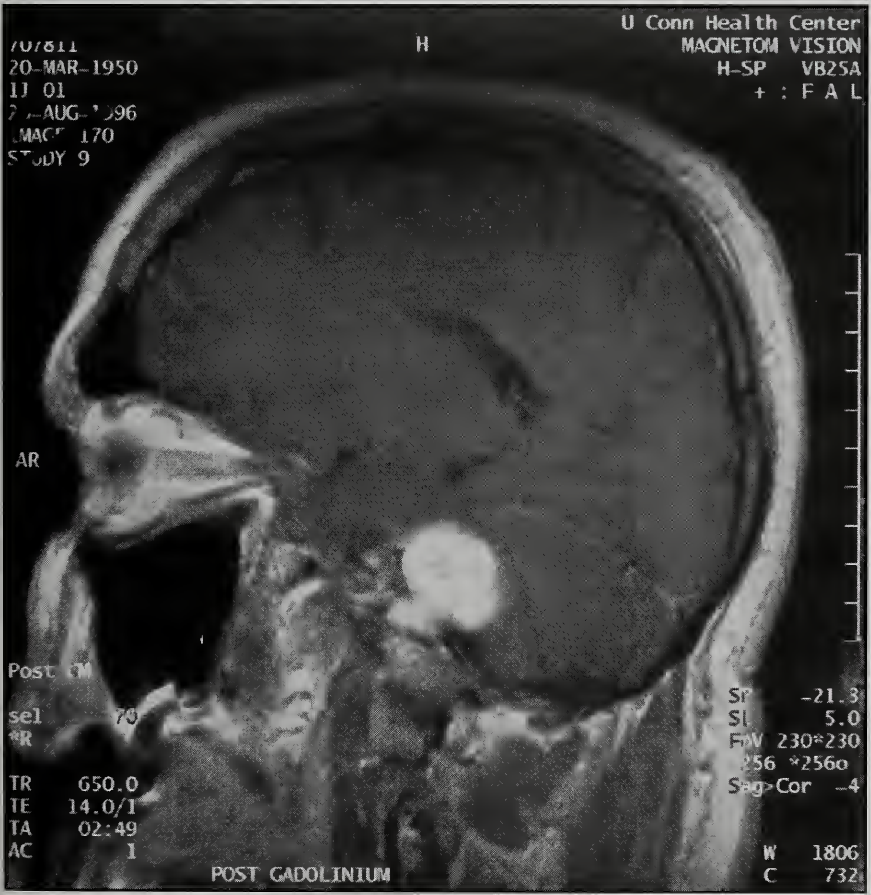


Figure 1c (top) and 1d (bottom)



The differential diagnosis of a CPA tumor includes meningioma and epidermoid tumor. These lesions represent the second and third most common masses at this site but occur with much less frequency than VS.[1,2,5] Meningiomas characteristically show intense enhancement with contrast as do VS, but usually are not centered at nor extend into the IAC, and typically exhibit a sessile, wide-based attachment to the dura along the petrous bone.[1,3,5] Epidermoid tumors (congenital cholesteatomas), which result from inclusion of ectodermal tissue during early brain development, characteristically do not enhance with contrast and often extend into adjacent cerebrospinal fluid spaces.[2,5]

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Figures 1b-d.—Axial (b), Coronal (c), and Sagittal (d) postcontrast T1-weighted images show intense homogeneous enhancement of the tumor. Note mass effect upon the pons. Location and signal characteristics were typical for acoustic schwannoma, which was confirmed at surgery.

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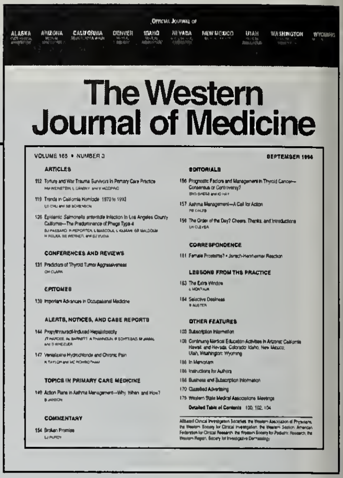
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Important Advances in Clinical Medicine

Preventive Medicine and Public Health

Ronald P. Hattis, M.D., M.P.H. and Richard Hart, M.D., Dr.PH., Section Editors

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in preventive medicine and public health. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Preventive Medicine and Public Health of the California Medical Association, and the summaries were prepared under the direction of Ronald P. Hattis, M.D., M.P.H., Richard Hart, M.D., and the panel.

Epidemiology and Control of Coccidioidomycosis in California

COCCIDIOIDOMYCOSIS is a fungal disease endemic principally to certain parts of the southwestern United States and northwestern Mexico and caused by *Coccidioides immitis*. The disease was first described in Argentina in 1892, but it was during the dust bowl migrations of the 1930s that the full clinical spectrum of coccidioidomycosis and its importance as a public health hazard for Californians residing in the southern San Joaquin Valley and the high desert were recognized. Although occasionally epidemic, coccidioidomycosis has principally been an endemic disease in certain California counties, with a background incidence of about 450 cases reported per year. In the early 1990s, however, there was a major resurgence of the disease in California that has led to a reexamination of public health control strategies.

Coccidioides immitis is a dimorphic fungus that grows as a mold in the upper levels of soil (saprobic phase) and as spore in its tissue (parasitic) phase. Ideal conditions for growth are a semiarid climate with a short, intense rainy season. Under favorable conditions, mycelia will grow and form arthroconidia at their distal tips; these arthroconidia will break off from the mycelia and become airborne with the slightest disturbance. Humans and other vertebrate hosts are exposed to *C immitis* by inhaling airborne arthroconidia, which expand to form characteristic spherules in the lungs at body temperature. These spherules cleave to form endospores that are released when the spherule bursts and, in turn, mature into new spherules. Immune response is cell-mediated, and investigators are gaining insight into which antigens are immunogenic. Symptomatic infection occurs in 40% of patients, with the principal symptoms being cough, fever, and chest pain. In a notable number of patients with primary infection, erythema nodosum will appear on the lower extremities, heralding the immunologic control of the infection; early investigators called this symptom complex "valley fever." The risk of dissemination is about 2% overall, but is increased for African Americans, Filipinos, Native Americans, pregnant women, elderly patients, and patients who are immunosuppressed. Principal complications are osteomyelitis, arthritis, and meningitis, all of which are difficult and expensive to treat.

The risk factors for acquiring coccidioidomycosis are exposure to dust during dry and windy conditions or because of the disruption of soil (for example, from construction) and exposure to soil (during archaeologic digs, for instance). Infection is common in residents of endemic areas. In studies of Native American children

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living in an endemic area of Arizona, the prevalence of infection was 9% among children younger than five years and 47% among five- to 14-year-olds. As a result of seminal studies of coccidioidomycosis among Army Air Corps trainees in the San Joaquin Valley during World War II, one investigator observed that "practically every long-time resident of Phoenix, Arizona, Bakersfield, California, or El Paso, Texas, will have had his personal bout with *Coccidioides*."'

The recent epidemiology of coccidioidomycosis in California is characterized by three interlinked epidemics. The first is the pronounced statewide increase in the number of reported cases that occurred between 1991 and 1995. During this five-year period, 14,086 cases of coccidioidomycosis were reported to the California Department of Health Services, with a peak of 4,517 cases in 1992. Of these cases, 8,931 (63%) were reported from Kern County. Only in 1996 has the incidence begun to approximate that of the pre-epidemic period, with 176 cases reported through week 10. This outbreak was probably the result of many factors, but two, the immigration of a nonimmune population to endemic areas and climatic conditions that were favorable to a multiyear bloom of *C immitis*, were probably the most important.

The second outbreak was one that occurred in Ventura County and was directly linked to dust clouds that emanated from landslides in the Santa Susanna Mountains caused by the Northridge earthquake in January 1994. In all, 170 cases were reported in a seven-week period following the earthquake. This outbreak is unusual in that Ventura County is not typically considered a hyperendemic area of coccidioidomycosis, although the Santa Susanna Mountains are part of the range that demarcates the southern range of the San Joaquin Valley. The climatic and soil factors that led to the general outbreak of coccidioidomycosis centered in Kern County also may have led to a similar bloom of *C immitis* on the southern edge of the Tehachapi range.

The third outbreak, which is intimately intertwined with the first, has occurred among patients with human immunodeficiency virus (HIV) infection in California. Coccidioidomycosis in the presence of HIV infection became a defining illness for the acquired immunodeficiency syndrome (AIDS) in the Centers for Disease Control's 1987 revision of the AIDS case definition. From 1987 to August 31, 1995, 317 cases of coccidioidomycosis had been reported among AIDS patients in California; in 158 (50%) of these, coccidioidomycosis was the first AIDS-defining opportunistic infection. Although accounting for only 0.3% of all AIDS-defining illnesses in California during this period, coccidioidomycosis accounted for 3.5% of new AIDS diagnoses in Kern County, 2.9% in Tulare County, and 2.2% in San Luis Obispo County. Interestingly, AIDS patients who had coccidioidomycosis as an AIDS-defining diagnosis were significantly more likely to be injection-drug users (18%) than those who had other AIDS-defining diagnoses (9%; $P = .006$).

The prevention of coccidioidomycosis is difficult, and efforts in the past have focused on preventing infection among short-term residents, such as military trainees, in endemic areas. In work with the Army Air Corps in World War II, one investigator focused on dust control—limiting construction during peak months, planting lawns, and paving roads and airstrips—to decrease the risk of infection. In one study, the attack rate among susceptible persons was 0.65% among recruits at Minter Field in Kern County, where these measures were employed, compared with 10% among German prisoners of war in a detention facility adjacent to Minter Field where these measures were not employed during the same 70-day period. Although other types of environmental controls have been discussed, such as the widespread application of fungicides or the use of respirators for construction workers, the ubiquity of the organism in its natural environment makes these measures and our traditional strategy of dust control less than adequate for controlling long-term exposure to the disease.

If we are unable to control long-term exposure to *C immitis*, the only remaining reasonable strategy to pursue is immunization. Attempts have been made to develop a vaccine for coccidioidomycosis, but these have been unsuccessful. Nevertheless, with the advancements in our understanding of the biology of the immune response to *C immitis* and with the general advancement in the techniques of molecular biology, coccidioidomycosis would seem a logical target for vaccine development. Unfortunately, given a commercial market limited to endemic areas, it is unlikely that vaccine manufacturers would embrace development.

Coccidioidomycosis has long been and continues to be a preventive medicine problem for the armed forces, however, and the Army, Navy, Marines, and Air Force still deploy large numbers of personnel to endemic areas. Perhaps the time is right for a new public-private partnership to be forged among commercial biotechnology firms, the Department of Defense, and the Public Health Service to exploit the new molecular biology and to focus an intensive research effort on a vaccine to prevent this important infection.

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Occupational Lead Exposure and Management

MANY adverse health effects of lead exposure are recognized, including cardiovascular, reproductive, neurotoxic, metabolic, and hematologic abnormalities. As researchers have developed more sensitive indicators of outcomes, no clear threshold for lead's toxic effects has been found. To establish a practical objective for controlling the problem of occupational lead exposure, *Healthy People 2000* proposes the elimination of "exposures which result in workers having blood lead concentrations greater than 25 μg per dl [1.21 μmol per liter] of whole blood." The accomplishment of this goal is supported by two national lead standards established by the Occupational Health and Safety Administration (OSHA)—one for general industry (1979) and a newer one for construction work (1993). These standards require workplace monitoring by employers and establish medical monitoring for exposed employees. Public health agencies, however, do not routinely receive information to assess the actual exposures; instead, they do surveillance primarily through the reporting of blood levels by laboratories under mandatory state lead surveillance programs.

There are now 23 state lead registries that report blood levels to the Adult Blood Lead Epidemiology and Surveillance Program at the Centers for Disease Control and Prevention. Data from 1994 indicate that there are 12,137 adults with blood lead levels of 1.21 μmol per liter (25 μg per dl) or higher, and that extrapolates to about 19,000 cases nationwide. Research has shown that about 95% of cases of adult lead intoxication are occupational in origin. Given the recent implementation of the construction industry standard, data from the Occupational Lead Poisoning Prevention Program (OLPPP) at the California Department of Health Services begin to define the contribution of construction work to the overall lead problem. In 1993, the California OLPPP received reports on 1,163 workers with elevated lead levels (≥1.21 μmol per liter), with 161 (11%) from the construction industry. By comparison, 32% of reports are from storage battery manufacturers, 13% from smelting industries, and 7% from automotive radiator repair shops. The 1994 data showed 1,332 cases of elevated levels, with 106 (8%) from construction industries.

These surveillance data indicate that occupational lead exposure and poisoning remain a substantial problem as we approach the millennium. This point is underscored by the recognition of widespread noncompliance with the OSHA standard's requirements for blood testing of lead workers. For example, only 10 of 405 wrecking and demolition companies and 43 of 4,768 painting contractors in California reported blood lead levels in 1994.

Although there is good reason to think that the nation will not meet the *Healthy People 2000* objective to eliminate notable lead exposures, overall lead levels appear to be falling in the United States. Results from the Third National Health and Nutrition Examination Survey (NHANES III) (1988 through 1991) showed a geometric mean blood lead level for all ages to be 0.14 μmol per liter (2.8 μg per dl), which is down from 0.62 μmol per liter (12.8 μg per dl) in the NHANES II (1976 through 1980.) The declines were relatively consistent across all age categories. Nevertheless, in the NHANES III, 0.5% of adults aged 20 to 49 years had blood lead levels of 1.21 μmol per liter or higher, as did 0.3% of adults aged 50 to 69 years. Most of these adult elevations can be attributed to occupational exposure.

Various methods have been proposed to improve the control of occupational lead poisoning. Efforts to develop lead registries in states that do not have them and to standardize the practices among registries would allow for better surveillance and, an important element, case recognition. More personnel available to investigate reported cases would, in all likelihood, lead to the recognition of cases among co-workers and improved exposure control. Placing broader requirements on employers for blood lead medical surveillance has also been advocated.

A different approach to the problem is true exposure surveillance (or hazard surveillance). In this method, a list of lead-using industries would be established for the purpose of tracking the uses of this toxic agent and better determining the groups at risk. A pilot project of this type has been implemented with the automotive radiator industry in Los Angeles and San Bernardino counties, California. As a result of efforts to systematically identify the companies, to work with them to develop on-site lead poisoning prevention programs, and to maintain regular contact, the percentage of employees in medical surveillance went from 9% to 95%.

Apart from enhanced medical and hazard surveillance, another way to advance towards the *Healthy People 2000* goal is to eliminate or reduce the uses of lead. Product substitution or elimination is a key principle in occupational and environmental health. It has been used successfully in U.S. lead policy by mandating greatly reduced use in gasoline and paint, and this can be credited for most of the decreases in lead levels found in the NHANES III. Proponents of this approach have advocated high excise fees on lead use in industry and increased research into substitute materials. California has established a fee on some of its lead products industries, but the fee is set primarily to finance public health efforts, not as a regulatory deterrent to lead use.

Practitioners in different settings are confronting the issue of how to provide the best medical care for an adult with an elevated lead level. Although many such cases are identified through surveillance by occupational medicine practitioners, a substantial number are discovered by other primary care professionals through good history taking, patient concerns, or symptoms. Confusion has occurred over the appropriate treatment protocol for adults, with some adults inappropriately receiving chelation therapy under guidelines intended for children. This misconception has perhaps been aggravated by the fact that some laboratories have sent out recommendations for chelation based on blood levels without considering the age of the patient.

As a result of inappropriate treatment and the use of chelating agents, management guidelines have been developed and are available from the California OLPPP—(510) 540-3448. The treatment of adults with chelating agents is based primarily on symptoms and is generally not indicated without symptoms. This is in contrast to child lead poisoning in which chelation is recommended in children with blood lead levels of 2.17 μmol per liter (45 μg per dl) or higher. Workers with blood lead levels between 0.48 and 1.16 μmol per liter (10 and 24 μg per dl) should have exposures identified and minimized. For adults with levels of 1.21 to 2.36 μmol per liter (25 to 49 μg per dl), there should be regular monitoring of blood lead and zinc protoporphyrin levels and the removal from exposure if symptomatic. Workers with blood lead levels above 2.40 μmol per liter (50 μg per dl) require removal from the workplace lead exposure in accordance with the OSHA standards, a complete medical evaluation, and ongoing monitoring with blood lead and zinc protoporphyrin levels. Practitioners should refer to appropriate federal or state lead standards for complete requirements of regulatory programs.

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Human Babesiosis and Ehrlichioses—Emerging Tick-Borne Diseases

LYME disease was the emerging tick-borne infectious disease on the West Coast in the 1980s. Now, however, the diseases babesiosis and ehrlichiosis must also be considered in patients who are febrile and have a history of tick exposure.

Babesiosis is a malaria-like illness caused by a species of *Babesia*, an intraerythrocytic parasite. Fever, chills, headache, and hemolytic anemia are common, and diagnosis is made by finding ring-shaped intraerythrocytic parasites on blood smears. *Babesia microti* has been the primary strain causing human disease in the northeastern United States. Since 1991, however, five patients in the West—four in California and one in Washington State—have been diagnosed with a *Babesia*-like organism designated WA1 (named for the first isolate in Washington State). Serum specimens from four of these five patients reacted to WA1 but not to *B microti*. All the California patients had a previous splenectomy, and one died of fulminant babesiosis, but the Washington patient was normosplenic and immunocompetent. From limited serosurveys, subclinical infection also occurs. The treatment of choice for disease with this new *Babesia*-like parasite has not yet been established, but patients have recovered after treatment with quinine and clindamycin. In the northeastern United States, *B microti* is transmitted by *Ixodes scapularis* ticks; the vector(s) for WA1 have not yet been identified.

Human ehrlichiosis is caused by two different species of *Ehrlichia*, which are obligate intracellular bacteria similar to rickettsiae. Human monocytic ehrlichiosis is caused by *Ehrlichia chaffeensis*, which invades mononuclear phagocytes, and human granulocytic ehrlichiosis is caused by a newly identified *Ehrlichia* species that is closely related to *Ehrlichia equi* and invades neutrophils. Exposure to *Ehrlichia* species may result in anywhere from asymptomatic infection to severe disease, the latter occurring particularly in older persons. Presenting signs and symptoms of ehrlichiosis due to either species are generally nonspecific: fever, chills, malaise, headache, muscle aches, and nausea. Blood tests commonly reveal elevated liver enzyme levels, leukopenia, and thrombocytopenia.

Since human monocytic ehrlichiosis was first described in 1987, more than 300 cases have been diagnosed, mostly in southern states. Human granulocytic ehrlichiosis, on the other hand, was first reported in 1994 in patients from Minnesota and Wisconsin and has since been identified in several northeastern states. In northern California, both human monocytic and granulocytic ehrlichioses are now diagnosed: in 1994 an elderly man was admitted to a hospital with a severe febrile illness due to human monocytic ehrlichiosis who had a greater than fourfold rise in levels of antibody to *E chaffeensis*. In 1995 human granulocytic ehrlichiosis was diagnosed by blood smear, polymerase chain reaction, and subsequently serologic tests in two adults, both of whom recovered with the administration of doxycycline. Both types of ehrlichioses can be treated effectively with doxycycline or tetracycline. The three California patients had not traveled out of their county in the three months before their illnesses began; two recalled removing a tick from themselves three weeks before their symptoms began. Whereas tick vectors for *E chaffeensis* in the southern states include *Amblyoma americanum* and *Dermacentor variabilis* and vectors for the human granulocytic ehrlichiosis agent in the Northeast include *I scapularis*, the tick vectors for *Ehrlichia* species in California have not yet been established.

There are measures the public can take to reduce the risk of tick-borne diseases: when spending time outdoors in tick-infested areas, wear longsleeved shirts, long pants, and socks, tucking shirts into pants and pants into socks; wear light-colored clothing to facilitate seeing ticks; use tick-repellent products; check self and children carefully for ticks; and remove any attached tick by grasping it with tweezers as close as possible to the point of attachment and pulling gently away from the skin. On the West Coast, prophylactic treatment of persons bitten by ticks is not recommended currently.

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Directly Observed Therapy for Tuberculosis

FROM 1985 to 1992, there was an increase in the number of active tuberculosis (TB) cases, from 22,000 to 26,673, reversing a downward trend of three decades. This resurgence in TB in the United States was due to multiple factors, including the human immunodeficiency virus (HIV) epidemic, homelessness, immigration, and treatment failures (often due to noncompliance). Noncompliance with the drug regimen and improper treatment prescriptions lead to multiple drug-resistant tuberculosis. Multidrug-resistant TB, defined as resistance to both isoniazid and rifampin, poses a substantial public health risk. An estimated 3.5% of cases of TB are resistant to these drugs, with higher rates in multidrug-resistant risk groups, which include HIV-positive persons, immigrants from drug-resistant areas, contacts of persons with multidrug-resistant TB, and persons previously treated for TB. Compliance with treatment is complicated by the length of treatment required, multiple medication regimens, side effects, and the setting in which TB is found—poverty, homelessness, and drug abuse. Previous techniques to assess compliance, such as verbal reporting, pill counts, and clinical progress, have failed.

Solutions to compliance problems include shorter regimens given by directly observed therapy. During directly observed therapy, health care workers directly observe the ingestion of the medications the entire course of treatment, which varies from six to 18 months, with medications given from two to five times per week. Directly observed therapy has been widely studied in Hong Kong, East Africa, and India and has been shown to be successful and practical in various environments, both urban and rural. Studies in the United States evaluating directly observed therapy have also shown substantial reductions in the incidence of directly observed therapy and in the frequency of primary TB drug resistance, acquired drug resistance, and TB relapse. In Baltimore, Maryland, Tarrant County, Texas, and New York City, successful results have been achieved in these U.S. communities where directly observed therapy has been implemented. These studies have contributed to early reports of an improvement in the rates from 1993 to 1995.

Although some directly observed therapy programs require the patients to present themselves to the health care facility at the required interval, directly observed therapy is also conducted in patients' homes or shelters. Temporary housing has been provided by public health departments during the course of directly observed therapy to provide a stable environment during drug treatment. Directly observed therapy given in a patient's own environment is especially useful where transportation prob-

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lems, language barriers, and social barriers would affect compliance with scheduled appointments at a health care facility.

Directly observed therapy is strongly advocated and supported as a community standard for both the public and private sectors by the National Jewish Hospital and other agencies with expert knowledge in treating TB, but its universal use is still an active topic of debate. Although cost factors should be taken into account and some patients can be expected to be fully compliant, directly observed therapy should be considered for all patients with active TB and used at a minimum for all who have multidrug-resistant TB and for any whose compliance might be in question.

The California TB Controllers Association has identified the following as risk factors for nonadherence to TB treatment regimens: history of alcohol or drug abuse, history of correctional incarceration, homelessness, major psychiatric or memory cognitive disorder, history of adverse reactions to previous TB treatment, poor acceptance of TB diagnosis, inability to manage self-care, and adolescence. Other indicators of possible noncompliance include slow clinical improvement or sputum conversion or clinical deterioration while receiving therapy. Children of persons in these groups are also likely to receive incomplete treatment without directly observed therapy. Medical community and public support for aggressive surveillance and directly observed therapy is essential, even if rates of TB continue to decrease, to avoid a resurgence of the disease.

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Multidrug-Resistant Tuberculosis— How Far Are We From New York City?

MULTIDRUG-RESISTANT tuberculosis, defined as tuberculosis (TB) that is resistant to both isoniazid and rifampin, has dreadful public health consequences. Multidrug-resistant TB organisms are not susceptible to the two most active antituberculosis drugs. Treatment generally requires more toxic and less effective medications given for longer duration (as long as 24 months after culture conversion to negative). The success rate of treatment is far inferior to that of drug-sensitive TB. The efficacy of currently recommended preventive regimens for multidrug-resistant TB is unknown. Before the 1990s, outbreaks of multidrug-resistant TB in the United States were scattered and sporadic. The steady decline in the number of newly reported cases of TB reversed after 1985. Soon thereafter came reports of multidrug-resistant TB outbreaks, many of which occurred in New York City. These more recent outbreaks were characterized by transmission to large numbers of people, including health care workers; rapid progression from infection to disease; and high mortality, attributed to the fact that many patients were also infected with the human immunodeficiency virus (HIV). We must begin to question how close we in the West might be to the scenarios described in New York City and what can be done to prevent similar public health disasters here.

In 1994 the Centers for Disease Control and Prevention published findings of a national survey of drugresistant TB in the United States. During the first three months of 1991, a total of 3,256 cases were identified that were tested to both isoniazid and rifampin, and 114 (3.5%) of these were resistant to both drugs. Of 64 cities with populations over 250,000, seven reported multidrug-resistant TB cases, and although the highest resistance rate was in New York City (13.9%), three California cities—Oakland, Sacramento, and Los Angeles—were included. Los Angeles is the most populous California city on the list, and the county of Los Angeles is even larger, containing more than nine million people (more than 42 entire states). Nevertheless, of 1,622 new TB cases reported from Los Angeles County (excluding Pasadena and Long Beach) in 1995, only 20 (1.2%) had multidrug-resistant TB (TB Control, Los Angeles County, provisional data), and the resistance rate continues to be far below that of New York City. The factors that are thought to have contributed to the development of multidrug-resistant TB and subsequent outbreaks are all present in Los Angeles County, including homelessness, immigration, substance abuse, nonadherence to drug regimens, and an HIV epidemic. Why isn't multidrug-resistant TB more common, and what can we do to prevent future outbreaks?

Since 1985, the Los Angeles County Health Department has used Rifamate (Marion Merrell Dow), a fixed-dose combination antituberculosis medication containing both isoniazid and rifampin. The use of this formulation may partly explain the low rates of multidrug-resistant TB in this county because it prevents patients from taking either drug alone, thus decreasing the risk of drug resistance developing from unintended monotherapy. The use of Rifater (Marion Merrell Dow), a fixed-dose preparation containing isoniazid, rifampin, and pyrazinamide, should also be considered when starting patients on empiric treatment pending susceptibility results.

Drug resistance is also prevented by interventions such as directly observed therapy that increases patient adherence to and completion of treatment. Incentives may do the same. In Los Angeles County, the percentage of homeless patients in the Skid Row area completing treatment was 53% in 1987. But by 1994, about five years after the creation of a food-and-housing incentive program, this had increased to 96%.

Finally, rapid and accurate clinical diagnosis shortens the duration of infectiousness by ensuring prompt treatment with appropriate medications. This is especially important in persons with the acquired immunodeficiency syndrome, whose symptoms may be attributed to *Mycobacterium avium* complex when *Mycobacterium tuberculosis* is the real culprit. Obtaining specimens for culture confirmation and susceptibility testing, preferably before starting an antimycobacterial drug regimen, is critical in this population, as is ruling out active TB before starting preventive therapy.

Public health interventions must be aggressively applied because the factors for multidrug-resistant TB outbreaks are all present in Los Angeles, and New York City is much closer than we think.

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Smoking Cessation—New Challenge and Opportunities

THE need for and means of assistance with smoking cessation have seldom been greater than in 1996. Increasingly, both the adverse effects of smoking and the availability of effective means of assisting smoking cessation are clear. Increases in both the strength and range of smoking-related risks have been noted since the 1960s. Smoking-cessation behavioral and pharmacotherapies are rapidly increasing in availability and ease of use.

Pharmacotherapies for stopping smoking now include nicotine (polacrilex) gum, patches, and nasal spray; the first two have recently become available over the counter in drugstores. Antidepressants are increasingly being investigated as an aid to stopping smoking, with the use of bupropion hydrochloride showing the most promise to date.

The availability of smoking-cessation aids is dramatically increasing. Inexpensive or free outbound phone counseling such as the multilingual California Smokers' Helpline (1-800-7NO-BUTTs) or insurer or private phone services are widely, promptly, and conveniently available. Federal (Agency for Health Care Policy and Research) guidelines on smoking cessation assistance are free by calling 1-800-358-9295.

Highly concentrated smoking-related risks exist in continuing smokers and are amenable to intervention in physicians' offices. The "Ask, Advise, Assist, and Arrange" model of smoking-cessation assistance is recommended. Clinicians are encouraged to ask about their patients' smoking status. Physicians should advise smokers of smoking's risks and the benefits of stopping. Assisting patients by providing them pamphlets, nicotine replacement, or referrals to phone, class, or other smoking-cessation resources increases quit rates. Arrangements for follow-up are important to support patients' smoking-cessation efforts.

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Naltrexone Hydrochloride Use in the Treatment of Alcoholism

ALCOHOLISM is a primary chronic disease with genetic, psychosocial, and environmental factors influencing its development and manifestations. The disease is often progressive and fatal. It is characterized by impaired control over drinking, preoccupation with the drug alcohol, the use of alcohol despite adverse conse-

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quences, and distortions in thinking, mostly denial. It is one of the most pervasive medical and social problems of our time. Not surprisingly, the treatment of alcoholism is also one of the most elusive, not only of this generation but since civilizations have been crushing grapes to make wine.

To date, the treatment of alcoholism has largely been characterized by detoxification and referral to various rehabilitation programs—12-step groups, recovery homes, church, and psychotherapy. Disulfiram (Antabuse), which blocks the metabolism of alcohol, produces a possibly toxic reaction with noxious effects that include nausea, vomiting, headache, and facial flushing. Although it has been available for many years, its effficacy has been shown only in patients who are willing to take the medication daily and are participating in a rehabilitation program.

The development of naltrexone hydrochloride as a pharmacologic adjunct to the treatment of alcoholism was based initially on studies using animals that looked at excessive alcohol consumption. It was found that alcohol-preferring strains of mice and rats have increased basal β-endorphin levels in the pituitary gland and in some brain areas relative to alcohol-nonpreferring rats. When alcohol-preferring rats were given naltrexone hydrochloride, a pure opioid antagonist, alcohol consumption decreased. In humans, nonalcoholic persons with a strong family history of alcoholism (high risk) were compared with nonalcoholic persons with no family history of alcoholism (low risk). Baseline plasma β-endorphin levels were lower in the high-risk group, and a small dose of alcohol caused a substantially greater increase in plasma β-endorphin levels than in those of the low-risk group. Based on these and other studies, the endogenous opioid hypothesis was formulated that proposes that the ingestion of alcohol stimulates the release of endogenous opioids that increase some of the rewarding effects of alcohol. This is not to say that endorphins are the only neurotransmitter involved in the behavior associated with alcohol consumption; serotonin and dopamine have also been implicated, and clearly there are multiple mechanisms that need further study.

What has been shown in other studies is that naltrexone hydrochloride use does seem to reduce craving, the relapse rate, and the "high" associated with alcohol consumption when combined with some form of psychological or social therapy. Studies were conducted using patients from the Philadelphia (Pennsylvania) Veterans Affairs Medical Center who had 20 years or more of heavy alcohol use; met five of nine criteria of the *Diagnostic and Statistical Manual of Mental Disorders,* third edition, revised, for alcohol dependence; and did not have a major psychiatric illness. During the 12-week period when patients received naltrexone hydrochloride, 50 mg per day, *vs* placebo, the placebo-treated group met criteria for relapse in 54% of cases, but the drugtreated group met criteria in only 23% of cases. Relapse criteria included drinking five or more days within a week, five or more drinks per drinking episode, or coming to the clinic with a blood alcohol level of higher than 22 nmol per liter (100 mg per dl).

Clearly it could be argued that the accepted standard of care or the treatment goal in alcoholic patients is total abstinence. Naltrexone use seems to reduce the risk of relapse but does not prevent a person with alcoholism from picking up the first drink. Thus, naltrexone may be most effective in patients with a higher risk for relapse—that is, patients with greater somatic symptoms and higher levels of alcohol craving, when accompanied by some form of behavioral or social therapy.

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Cigarette Smoking Before and After an Excise Tax Increase and an Antismoking Campaign—Massachusetts, 1990-1996

IN November 1992, residents of Massachusetts approved a ballot petition (Question 1) that increased the tax on each pack of cigarettes from 26¢ to 51¢ beginning 1 January 1993, and requested that the legislature spend the proceeds on tobacco control and health education. The Massachusetts Tobacco Control Program (MTCP), administered by the Massachusetts Department of Public Health (MDPH), was established in response to the approval of the petition. In October 1993, MTCP initiated a statewide mass-media antismoking campaign. In early 1994, the program began funding local boards of health and school health and other youth programs to promote policies to reduce public exposure to environmental tobacco smoke and to restrict youth access to cigarettes. Efforts also included support to health education programs, primary-care providers, and other services to help smokers quit. Through June 1996, MTCP expenditures totaled $116 million, including $43 million for the mass-media campaign.[1] To assess the effects of the excise tax increase and the antismoking campaign on cigarette smoking in Massachusetts, CDC and MDPH analyzed data about the number of packs of cigarettes taxed per capita and the prevalence of cigarette smoking during the period preceding (1990-1992) and following (1993-1996) implementation of the ballot petition. This report summarizes the findings of the assessment and compares trends in cigarette consumption (ie, purchases) in Massachusetts, in California (where a voter-mandated cigarette tax increase in January 1989 funded a statewide antismoking campaign that began in April 1990[2]), and in the 48 remaining states and the District of Columbia combined. The findings suggest that the number of packs of cigarettes taxed per capita declined substantially in Massachusetts after implementation of the ballot petition.

For each full calendar year from 1990 through 1995, taxable cigarette consumption for Massachusetts, California, and the other states and the District of Columbia combined was derived from monthly reports from the Tobacco Institute on tax receipts for wholesale cigarette deliveries.[3] Taxable consumption for 1996 was estimated as twice the cumulative values for January-June. Per capita rates (in packs/year) were based on the resident population aged ≥18 years in each state.[4]

Data on the average retail price of a pack of cigarettes in Massachusetts at four-week intervals during 1990-1995 were based on bar-code scanning data provided by Information Resources, Inc.[5] Data were obtained for a seven-county region (including the Boston and Worcester metropolitan areas) that represented 83% of Massachusetts residents based on 1990 census estimates. The observed retail prices of cigarettes were adjusted for inflation by using the consumer price index for urban workers in the Boston metropolitan area.[6]

Data from the Behavioral Risk Factor Surveillance System (BRFSS) for 1990 through 1995 (the most recent year for which data were available) were used to estimate the annual prevalence of cigarette smoking among adults in Massachusetts, California, and the remaining participating states combined. The BRFSS is a population-based, random-digit-dialed telephone survey of the noninstitutionalized U.S. population aged ≥18 years. The District of Columbia and seven states (Alaska, Arizona, Kansas, Nevada, New Jersey, Rhode Island, and Wyoming) were excluded because they did not participate in BRFSS one or more years during 1990-1995; (CDC,

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Table 1.—Number of packs of cigarettes purchased per adult,* by year—selected U.S. sites, 1990-1996†

Year	Massachusetts	California	48 Remaining states and the District of Columbia
1990	125	100	139
1991	120	92	134
1992	117	89	131
1993	102	88	125
1994	101	73	127
1995	98	76	125
1996§	94	75	123

*Aged ≥18 years.

†Based on reports of tax receipts for wholesale cigarette deliveries.

§Estimated as twice the cumulative values for January-June.

Source: The Tobacco Institute.

unpublished data, 1995[7]). Because sampling errors for annual BRFSS estimates precluded precise year-to-year comparisons, three-year average prevalences were estimated for 1990-1992 and 1993-1995. A current smoker was defined as any respondent who answered "yes" to the following two questions: "Have you smoked at least 100 cigarettes in your entire life?" and "Do you smoke cigarettes now?" Estimates were weighted based on the number of telephones per household and the age, sex, and racial/ethnic composition of the residents of the individual states. The prevalence of smoking for the remaining participating states combined was computed as a population-weighted average of the prevalences estimated for the 41 states that participated in BRFSS every year during 1990-1995. SESUDAAN was used to calculate 95% confidence intervals (CIs).

During 1990-1992, taxable per capita consumption of cigarettes by adults declined 6.4% in Massachusetts, 11.0% in California, and 5.8% in the 48 remaining states and the District of Columbia combined (Table 1). In Massachusetts, from 1992 (the year before implementation of the petition) to 1996, taxable per capita consumption declined by 19.7% (from 117 packs to 94 packs) (Table 1); in California and the remaining states, per capita consumption declined by 15.8% and 6.1%, respectively.

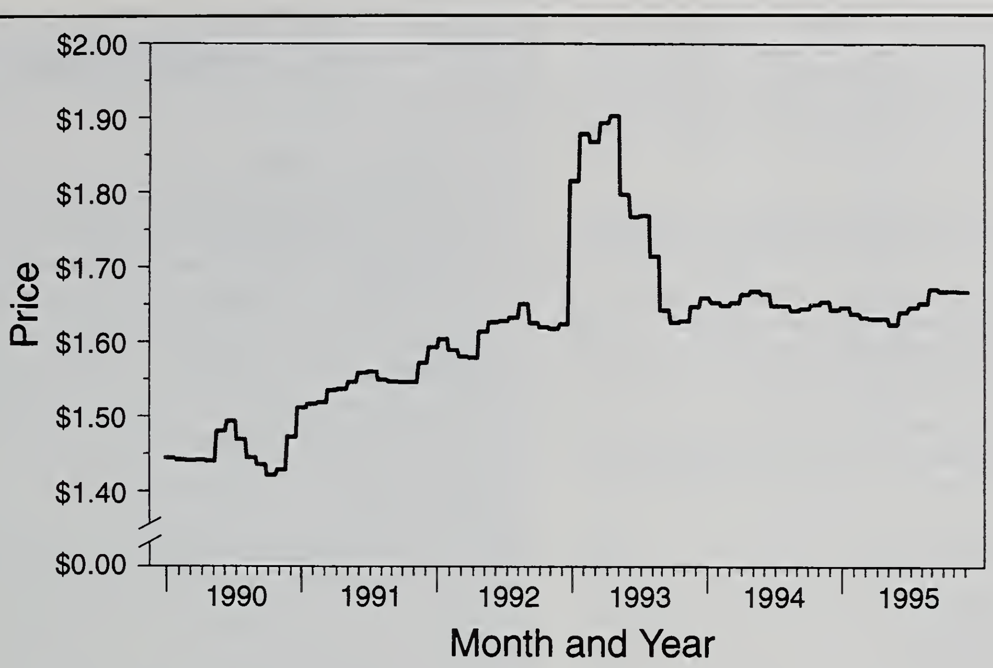
Immediately after the Massachusetts petition became effective on 1 January 1993, the real price of cigarettes increased sharply but subsequently declined (Fig. 1). In response to increasing sales of discount brands, in April 1993 one U.S. cigarette manufacturer announced a nationwide, 40¢-per-pack price discount on its major premium brand, and in May, another manufacturer matched the discount on its major premium brands. In August, all manufacturers announced a permanent wholesale price reduction of 39¢ per pack on all premium-brand cigarettes.[8] As a result of these nationwide price reductions, by the end of October the real price of cigarettes in Massachusetts had declined to the 1992 level (Fig. 1).

The prevalence of current smoking among adults in Massachusetts was 23.5% (95% CI=±1.4%) during the three years before implementation of the petition (1990-1992) and 21.3% (95% CI=±1.2%) during the three years after implementation (1993-1995). In comparison, the prevalence of adult smoking declined 2.7% in California (from 20.1% [95% CI=±0.9%] during 1990-1992 to 17.4% [95% CI=± 0.9%] during 1993-1995) and 0.8% in the 41 other BRFSS participating states combined (from 24.1% [95% CI=±0.3%] during 1990-1992 to 23.4% [95% CI=± 0.2%] during 1993-1995).

Reported by: *J.E. Harris, M.D., Massachusetts General Hospital, and Massachusetts Institute of Technology, Boston; G.N. Connolly, D.M.D., D. Brooks, M.P.H., Massachusetts Department of Public Health. B. Davis, Ph.D., California State Department of Health Services. Epidemiology Branch, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion, CDC.*

Editorial Note: The findings in this report indicate that, in Massachusetts, the number of packs of cigarettes taxed per capita decreased significantly during 1992-1996, following implementation of a ballot petition to increase the excise tax on cigarettes and initiate an antismoking campaign. This change was similar to decreases in California,[9] the only other state to have initiated an extensive statewide antismoking campaign in conjunction with an increase in cigarette taxes. However, complexities related to the accurate measurement of changes in smoking prevalence among adults in Massachusetts require further study to determine the combined impact of the excise tax increase and antismoking campaign on adult smoking prevalence in the state.

Although some smokers in states that implement increased cigarette excise taxes may attempt to avoid higher prices by purchasing cigarettes in neighboring states with lower prices, the 19.7% decline in per capita consumption of cigarettes in Massachusetts during 1992-1996 probably reflects the effects of the tax increase and antismoking campaign rather than increased cross-border purchases by



*Per pack. Adjusted to 1990 dollars.

†Based on bar-code scanning data for a seven-county region (including the Boston and Worcester metropolitan areas) that represented 83% of Massachusetts residents based on 1990 census estimates.

Source: Information Resources, Inc.

Figure 1.—Real price of cigarettes,* by month and year—Massachusetts, 1990-1995†

Massachusetts smokers. During 1993-1994, cigarette excise taxes in Connecticut and Rhode Island were increased to levels comparable with those in Massachusetts; however, in New Hampshire, the real price of cigarettes declined during 1992-1993, and taxable cigarette consumption increased by 17 million packs.[3] Increased taxable consumption in New Hampshire may reflect either a real upward trend in smoking by state residents or increased cross-border purchases by Massachusetts smokers. However, even if the 17 million-pack increase were attributed entirely to cross-border purchases by Massachusetts smokers, the decline in per capita consumption in Massachusetts during 1992-1996 would have been reduced to 17.0%.

The findings in this report are subject to at least two limitations. First, the estimates of per capita consumption were based on tax receipts at the wholesale level and not the actual number of cigarettes consumed. Distributors may delay or advance cigarette shipments in anticipation of announced wholesale price changes or excise tax increases. Such shifting of wholesale deliveries may produce year-to-year changes in tax receipts that do not reflect actual changes in per capita consumption. However, temporal trends in taxable consumption over a period of several years probably reflect actual consumption more accurately. Second, a decline in the number of cigarettes taxed in a single state may result in an overestimation of the actual decline in consumption if resident smokers increase their out-of-state purchases. However, the data on taxable per capita cigarette consumption in Massachusetts and three adjacent states suggest the increased purchase of cigarettes by Massachusetts smokers in neighboring New Hampshire was not a major source of the reported decline in per capita consumption in Massachusetts.

Increases in the price of cigarettes can reduce per capita consumption and the prevalence of smoking.[10] In Massachusetts, however, the tax-induced increase in cigarette price was soon offset by coincidental national, industrywide price reductions that began during the spring of 1993. While real cigarette prices returned to pre-1993 levels, per capita consumption in Massachusetts continued to decline. This finding suggests that a tax increase combined with an antismoking campaign can be more effective in reducing per capita consumption than a tax increase alone. MTCP plans additional evaluations of this preliminary finding, including changes in smoking prevalence among adults and further comparisons with findings from California and other states.

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Commentary

Academic Physicians, Clinical Investigators, and Managed Care

Whither Hippocrates?

This article is based on Presidential Comments made to the Western Association of Physicians, Carmel, California, February 1996.

It has been my distinct pleasure to serve as President of the Western Association of Physicians since February 1995. I could select from many subjects for a presidential perspective in this era of dramatic advances occurring in the science of medicine in parallel with what are equally dramatic steps backward in the way medicine is practiced. Instead, I will share some thoughts about the unique role of academic physicians and clinical researchers, including their ethical precepts and achievements.

To anyone who reads the lay press, it is obvious that medicine is no longer perceived in the same favorable light as it was a generation ago. This is true despite incredible advances in biomedical science brought about through basic biomedical research, much of which was carried out at the bench and translated to the bedside by physician investigators such as those represented by this association. The improvement in age-adjusted mortality over this period from 1950 to the present is staggering, considering that the manipulation of "risk factors" is relatively recent (Fig. 1). I believe that these changes are more likely related to improved patient care. We need only to think of the fact that today, coronary artery bypass surgery can be done with less than 1% mortality; that heart, kidney, and liver transplant graft survival from unrelated donors approaches 90% at one year; that recombinant human erythropoietin is used routinely in medical practice; and that diseases such as leukemia and other formerly fatal cancers have high remission rates and even cures. It is possible to go on and on about the achievements of medical science and medical research. Yet, policymakers, the public, and even leaders in medicine are dissatisfied. They talk about the fact that medical care is too expensive. Is medical care really too expensive, or is too much being taken in profit or spent on marketing and administration? John Kitzhaber, M.D., the physician-governor of Oregon, recently uttered the following statement at the Oregon meeting of the American College of Physicians, "The Hippocratic Oath is outdated for the 20th century," in defense of the priority list of the controversial Oregon Health Plan. Dr Kitzhaber was discussing the ethical dilemmas faced by physicians in providing the best medical care for individual patients.[1] Merwyn Greenlick, Ph.D., Chair of the Oregon Health Sciences University Department of Public Health, talks about a new paradigm for providing medical care, "population medicine," again as opposed to the traditional doctor-patient relationship (oral communication, October 1994). If this euphemism that presumably means doing the greatest good for the greatest number of people with the dollars available is translated by health care professionals to treating only patients with good prognoses or caring for healthy low-risk people, the results will be disastrous. The concept of managed care has been embraced both as a money-saving device and as a way to implement important preventive services. These trends have led to the assumptions that the quality of medical care is reflected by and can be improved by unproven programs, such as population cholesterol screening, adult immunization programs, and other untested strategies.[2] Physician performance in these managed care systems is measured by "productivity quotas" and other measures having little relationship to physician quality (Fig. 2).[3] Further, it is assumed by health maintenance organization administrators and leaders that the medical practitioners needed to carry these types of advances forward are less well-trained physicians or physician extenders who will be cost-effective and will, they also assume, function without decreasing the quality of medical care. While patient satisfaction surveys are marketed and promoted by those providing care in this way, the relatively silent lower income groups are not so sure (Fig. 3).[4,5]

It is my view and my message that academic medicine as practiced by physician investigators, particularly in academic settings, has rolled over too easily to these untested assumptions. I am embarrassed to acknowledge that many of those who have rolled over have been prominent academic leaders whose own career paths to the top were dependent on their contributions as physician-scientists. Can you imagine asking an institutional review board to approve an experiment in which one outcome might be a decreased quality of medical care

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Reprinted with permission from *The Western Journal of Medicine*. Academic physicians, clinical investigators, and managed care—Whither Hippocrates? Bennett WM: *West J Med* 1996; 165:241-4. From the Department of Medicine, Division of Nephrology, Hypertension, amd Clinical Pharmacology, Oregon Health Sciences University, Portland.

Reprint requests: William M. Bennett M.D., Department of Medicine, Division of Nephrology, Hypertension, and Clinical Pharmacology, Oregon Health Sciences University, 3314 SW US Veterans Hospital Rd. PP Ste 262, Portland, OR 97201-2940.

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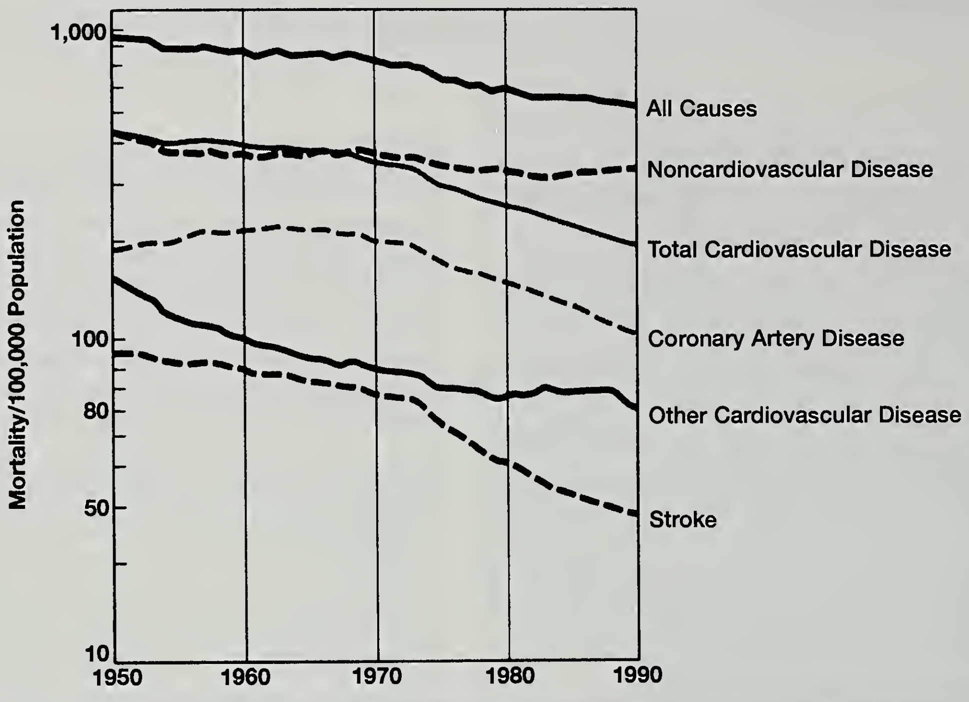

Figure 1.—The age-adjusted mortality in the United States for 1950 through 1990 is shown.

without asking the permission of patients involved, much less obtaining any type of informed consent? No one would let you do that experiment. Yet, this is precisely what managed care does, without the consent of patients. Does it really make sense for less well-trained physicians and physician extenders to look after patients with complicated medical conditions such as leukemia, organ transplantation, the acquired immunodeficiency syndrome, and oncologic problems, for which specialists and clinical investigators have provided a sophisticated level of medical care that is unparalleled in the world? Is there any situation you can think of in medicine, or with any other form of intellectual pursuit, where reducing the knowledge base of the providers has improved the outcome?

9 measures of quality
5 measures of access to care and satisfaction with care
15 measures of membership and utilization—procedure and hospital admission rates for various conditions
15 measures of finance—loss ratios, liquidity, and financial reserves
15 measures of structure and management—board certification, turnover of physicians, case management, and utilization review

Figure 2.—The content of health plan employer data and information set is shown.

These new trends in the delivery of health care, which have largely gone unchallenged, will create a new minority group, namely, the "seriously ill." Furthermore, in this rush to provide 1996 care more broadly, or more cheaply, no thought is given to money for research or even the training of the next generation of physicians who will be needed to translate the excitement and investment of bench research to the bedside. Managed care pays for none of the freight of its talent while enjoying the largesse of federally supported training programs. There has been a decline of more than 70% in research applications to the National Institutes of Health from physician-scientists in the past several years.[6] Moreover, many of us who have served as program directors in the past several years can attest to the fact that interest in careers in biomedical research by today's young physicians approaches zero. Why should talented persons, who for many years have studied hard and ranked at the top of their classes, select a career path that seems so obviously underappreciated and unsupported by today's society?

Many factors that have accounted for our current situation are clearly beyond our control. But as physicians and physician-clinical investigators interested in our patients and the advancement of medical science, we have some options available. I propose the following actions:

- First and foremost, we can speak out for our patients. When, in our judgment, it is not in a patient's best interest for a medical procedure to be either denied or

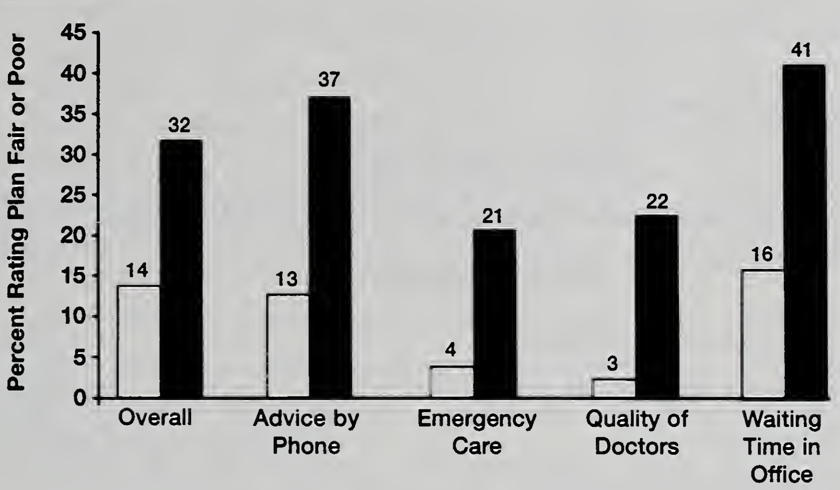

Figure 3.—The experiences of low-income patients (annual income <$15,000) in managed care are shown (from Louis Harris and Associates[5]). White bars = fee-for-service patients, black bars = patients in managed care.

approved, we must advocate for that patient with the system. No one else will do it. I believe Dr. Kitzhaber was mistaken; the Hippocratic Oath is very relevant for the 21st century. We need to watch for and speak out against the inherent conflict of interest whereby incentives are put into medical practice for financial and other reasons dissociated from patients' best interests. Fortunately, Oregon will not ration care because no one there has the political will to "go down the list" of prioritized procedures. There are few data about the long-term financial viability of the Oregon Health Plan (as mandated by law), but there are indications that it is an artistic disaster in deep financial trouble (Julie Ferguson, Vice President, Health Systems and Quality, Physicians Association of Clackamas County), written communication, January 29, 1996). It should be noted that Oregon has been able to ration only for the poor and not the entire state, as planned. In 1991 then-Senator Albert Gore said, "But Oregon has made a tragic choice and a horrible mistake in responding to the plight of the uninsured by developing a scheme that takes from the poor to help the poor, that preys on the limited political clout of poor women and children, and whose only answer to skyrocketing health-care costs is to ration care." The Oregon plan "is a declaration of unconditional surrender just as the first battles are being fought over the future of our health-care system."[7]

- We must continue to advocate for the training and development of basic and clinical investigators. The American Board of Internal Medicine is proposing a shortening of generalist training in internal medicine with an extension of research training, both in basic and clinical science, to produce a generation of subspecialists that can translate the tremendous advances of science to the bedside.[8]
- We should endorse the principal-care concept and disease management organizations. This concept states that an internal medicine specialist or subspecialist can best serve as the primary care physician and coordinate care for patients whose medical condition requires and deserves such subspecialty intervention. Obvious examples are oncologic problems, chronic renal failure, endstage heart disease, organ transplantation, chronic rheumatoid arthritis, and brittle diabetes mellitus.
- We should mobilize our patients. The patients are the victims of the processes we are discussing, not us. Their children will suffer the consequences of the demise of the biomedical research enterprise in this country and the loss of global leadership in this area that the United States has always enjoyed. Moreover, it is only the patients, not us, who have the political credibility to reverse the current trends. The burden of proof for the throwing away of the past 30 years of medical advances should be shifted to the people who want to do something radically different without any proof of safety and efficacy.
- Physician-clinical investigators need to take a responsible role with the media. We need to educate the next generation of consumers about the processes of science, the pitfalls of "magic bullets," the way new drugs become approved, and all the things that, when twisted by reporters looking for a story, unfairly raise expectations and lead to a loss of confidence in the whole medical enterprise. We need only look as far as the supermarket, the television, and the popular press to see how many billions of dollars, which could be used to provide traditional medical care, are spent on alternative medicines, tonics, vitamins, and herbal remedies.

HEALTH SCIENCES AND

Table 1.— The Health and Financial Effects of Prohibition in the United States*

Variable	**Effect**
Deaths due to overdose and impure alcohol, No.	1,000/yr
Alcohol use in United States	Dropped by 50%/yr
Deaths due to cirrhosis	Dropped by 64%/yr
Mental health admissions due to alcohol	Dropped by 53%/yr
Alcohol-related deaths in United States, 1992-1995, No.	125,000/yr
Cost of alcohol-related health, motor vehicle accidents, crime, $	140 million
Taxes collected, $	20 billion

*From M.H. Moore, *The New York Times*, October 16, 1989, p A21.

> The social contract of American medicine presupposes that physicians are patients' advocates, not advocates for society against patients whose care is costly or patients whose condition is such that physicians cannot be sure that procedures undertaken will have a high likelihood of long-term benefits.

Figure 4.—The ethics against the rationing of medical services by a physician are spelled out (from Bursk et al[11]).

- If we really want to improve the public health, it might not be done through a medical model at all. The medical problems associated with tobacco, alcohol, and illicit drug use, related domestic violence, and trauma represent the major portion of health care costs.[9,10] If these societal problems were addressed with political will, any appropriate medical care for the sick could be easily afforded. The incidence of these totally preventable medical problems is escalating, however, eroding the nation's limited health care funds. It is of interest to look at the data from the period of alcohol prohibition so reviled by revisionist history. From a public health standpoint, it was a booming success (M. H. Moore, "Actually Prohibition Was a Success," *The New York Times,* October 16, 1989, p A21) (Table 1).[11] Physicians need to stand up and speak out and take an active role in helping to educate and politically influence society to set the practice of medicine back on track.

In conclusion, we need, like no other time in history, to continue to advocate for our patients and to speak out against the rush to make medical care just another product to be sold on the open market. Medicine is not a business. It is a profession with a high calling and ideals that are as relevant today as they have ever been, perhaps more so (Fig. 4).[12] If we, who are the leaders in medicine, allow these changes to occur without speaking out, we will be as guilty as the chief executive officers of managed care organizations who sacrifice quality in return for pocketing millions of dollars in salary. This corporate culture of medicine will be the savings and loan debacle of the 1990s.

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50 Years Ago

From *The Connecticut State Medical Journal*

January 1947

Dr. Winternitz Addresses New Haven Cancer Committee

Dr. Milton Winternitz, professor of pathology at the Yale University School of Medicine, addressed more than 100 persons at a meeting of the New Haven Cancer Committee Friday evening, November 22, at the New Haven Medical Association building.

Speaking on the subject "What We Know About Cancer," Dr. Winternitz traced the history of cancer research and told his audience that the cause of the disease may be discovered by scientists now probing in the submicroscopic world of atomic structures.

A new motion picture on cancer, "Time is Life," was shown by a representative of the Connecticut Cancer Society following the talk. Other brief talks were given by Mrs. George Cowgill, chairman of the service committee; Miss Elizabeth Fox, director of the Visiting Nurses' Association; and Miss Dorothy Schober, health education consultant, Council of Social Agencies. A social hour followed the program.

Hartford High School Juniors 99% Tuberculin Tested

Ninety-nine per cent of all juniors attending Hartford, Connecticut, high schools participated this year in the voluntary tuberculin testing program carried on by the Hartford Tuberculosis and Public Health Society in cooperation with the Board of Education and the Health Department. According to *Let's Look At It*, publication of the association, this excellent record is due to the combined efforts of the principals, nurses, teachers, Junior Board and Dr. Hennessy, chairman of the association's medical advisory committee.

Tuberculin testing is offered each year by the association. Two tests are given, with the second one limited to those students whose first test was negative. A careful check is made after each test and those students showing a positive reaction are x-rayed by the Hartford Health Department.

New Tuberculosis Association Organized in New Haven

A new association incorporated as the New Haven Tuberculosis and Health Association was organized on October 21, 1946, for the purpose of conducting a broad and expanded program of tuberculosis education, case-finding and rehabilitation in New Haven. Following a survey made by the National Tuberculosis Association, the recommendations were discussed at a conference some months ago with representatives of the Employees Tuberculosis Relief Association, and the State and National Associations. As a result of this conference the Employees Tuberculosis Relief Association decided to restrict its activities to its primary purpose of relief for industrial workers and their families, therefore a new group should be organized to develop the broader program as outlined in the authorized forms of tuberculosis work to be financed by the sale of Christmas Seals.

Professor Ira V. Hiscock acted as temporary chairman of the organizing group, with Miss Helen M. Currier as temporary secretary, and a constitution was adopted naming the following objectives for the Association: To conduct an educational campaign against tuberculosis and for the promotion of health; to develop effective health education methods; to ascertain unfulfilled health needs; and to cooperate with official and other health agencies.

Officers and directors elected to serve until the first annual meeting include: Dr. David R. Lyman, president; H. Gordon Sweet, vice-president; Mrs. Stuart H. Clement, secretary; and W. Herbert Frost, treasurer. In addition to these officers the following comprise the executive committee: Prof. Ira V. Hiscock; Dr. Joseph N. D'Esopo; and Miss Gertrude Touchton. Other directors include: Dr. Creighton Barker, D. Spencer Burger, Rev. William J. Daly, Mrs. Theodore S. Evans, Mrs. James Ross Gillie, Patrick J. Goode, Mrs. Edward H. Goin, Mrs. Clarence A. Hadden, Mrs. Frederick W. Hilles, Mrs. Samuel C. Harvey, Richard C. Lee, Dr. Joseph I. Linde, Raymond A. Loring, Miss Elsa Montgomery, Justin L. O'Brien, Dr. Arnold B. Rilance, Gino Santella, Rev. Philip G. Scott, Maurice B. Ullman, and Dr. C.-E. A. Winslow.

(continued on next page)

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Reprinted from the *Connecticut State Medical Journal*, January 1947.

50 Years Ago ... cont'd

H. Gordon Sweet was named to serve as the representative director on the board of the Connecticut Tuberculosis Association for two years, and William T. Beazley was appointed chairman of the 1946 Christmas Seal Sale. The Association has taken offices at 341 State Street, and Miss Virginia Cook, a graduate of Syracuse University with postgraduate work at New York Hospital, Cornell Medical Center, has been loaned to the New Haven Association as a field secretary from the Connecticut Tuberculosis Association.

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Connecticut Women in Medicine

No one truly knows who the very first woman medical practitioner in the region of present day Connecticut was. There were, no doubt, early Native American women practitioners but no written history exists to corroborate this. Most medical practice at the time was done by medicine men or shamans. However, women as herbalists and by derivation as medicine women is a Native American tradition which survives to this day and is exemplified by Dr. Gladys Tantaquidgeon of Uncasville, who at the age of 97 is the oldest living Mohegan in Connecticut. She is renowned for her herbal knowledge and therapy, having written extensively on the subject. In recognition of this and her work supporting Native American culture, she recently received an honorary degree from Yale University. Medicine woman Gladys Tantaquidgeon traces her heritage in herbal medicine to Martha Shantap Uncas (1761-1859).

Martha Shantap Uncas taught her granddaughter Fidelia Fielding (1827-1908), who with medicine woman Emma Baker (1828-1916), taught Gladys Tantaquidgeon (1899-present) the Mohegan-Pequot traditional beliefs, the life of a tribal culture-keeper, and the tradition of a herbalist. Medicine woman Tantaquidgeon exemplifies a continuous heritage line from colonial times to the present in the practice of Native American herbalism.

From the very founding of Connecticut as a colony, women have been involved in the medical profession. Herbert Thoms, writing about doctors in colonial Connecticut recounts, "A number of early settlements managed to exist for some years without any professional medical attention at all, the midwife and minister giving whatever assistance and advice they could. The midwife was probably more skilled and in earliest times she usually had been trained abroad, having had considerable experience before coming to this county. She was also held in high regard—thus the widow Bradley of New Haven was given a house and lot rent-free by the order of the court."

Some of the first "natural healers and bone setters" practicing the healing arts in early Connecticut were women. Who the first English settler practitioner was is unclear, but among the first women practitioners there are three who stand out. After the death of her husband in the late 1700s, Mary Porter of Wethersfield continued her husband's practice and was renowned throughout the area for her bone-setting abilities. Hannah Bradford was the only physician in Windham County for many years, and Ester Grosvenor was the first physician in Pomfret.

Our current history shows that we have progress to make in getting women physicians interested in organized medicine. Currently, of the 6,800 physicians in the Connecticut State Medical Society, only about 1,000 are women. We expect the percentage of women in the CSMS to increase given the fact that some medical schools now graduate classes composed of graduates half of whom are female. While time will no doubt increase the number of women in organized medicine in the State of Connecticut, we should not wait.

At the recent 1996 semi-annual CSMS House of Delegates meeting, a Women in Medicine seminar was held. Nancy Dickey, M.D., a family practitioner from Texas and Chair of the American Medical Association Board of Trustees was the keynote speaker. Dr. Dickey spoke of her career and how she became involved in organized medicine and how we should choose a mentor to help us in our careers.

Three outstanding female Connecticut physician panelists then followed. Dr. Katherine Ill, President of the Hospital for Special Care and past President of Hartford County Medical Association gave an excellent speech on how women's attributes make them well suited to the negotiation processes needed to succeed in our present day environment. Dr. Karen Devassy, internist, described how she was able to continue a practice and raise a family after the tragic death of

(continued on next page)

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her husband. She then became a successful writer and contributor to *Northeast Magazine*. Dr. Kristen Zarfos, a general surgeon from Middletown and president of the Middlesex County Medical Association spoke on combining an active surgical practice and family life. Her conclusion: you can have both, but not necessarily at the same time.

HMOs in the state have been under severe criticism for the policies concerning same-day mastectomies, often called drive-through mastectomies. Dr. Kristen Zarfos deserves the credit for bringing this important issue forward. The result has been tremendous negative publicity for the HMOs. ConnectiCare has responded to this negative publicity by improving its options for mastectomy patients. ConnectiCare's policy now indicates that, if a doctor feels an inpatient mastectomy is necessary and is in the best interest of care, it will be approved on the first phone call. ConnectiCare will also now ask practicing physicians to review the Milliman and Robertson guidelines. These guidelines have been particularly onerous and not in the best interest of the patients.

Punitive measures against physicians who have patients with long hospital length of stays (as determined by the HMO) can still be penalized or dropped from the HMO panel. This needs to be addressed, but the process of returning control to physicians in this matter was started by Dr. Kristen Zarfos. Kudos and congratulation to Dr. Zarfos! This aspect of mastectomy care was brought forth by a female general surgeon. It is a perspective which medicine in Connecticut has had, but more is needed.

These three physician speakers, Drs. Ill, Devassy, and Zarfos give a distinctive view of their involvement in the medical profession. Only one other male physician besides myself attended the breakfast and panel discussion. More men need to acquaint themselves with their female medical colleagues and their distinctive points of view. The success of this Women in Medicine panel indicates the CSMS should continue similar programs.

The CSMS has not yet had a woman president. We should remember that the candidates for CSMS presidency come from the constituent county medical societies and are not proposed by the CSMS.

Everything should be done to encourage women to enter the medical profession and choose that specialty which most interests them. We must also encourage women to become more active in organized medicine. Everything possible should be done within the Connecticut State Medical Society to let women know that they are welcome.

Talent has often been overlooked. Guiseppe Verdi was rejected by the Milan Conservatory for lack of musical talent. Organized medicine cannot overlook the vast talents and distinctive point of view of women. It has been noted that 50% of the world's brains are in women's heads. Connecticut physicians need women leadership and need it now.

Michael M. Deren, M.D.
President

REFLECTIONS ON MEDICINE

Doctor Stories

ROBERT U. MASSEY, M.D.

FOUR or five decades ago when my colleagues and I were thirty-somethings, new members in a growing group practice, our Saturday parties generally fell into a predictable pattern; after the first drink we left our wives in the living room talking about the kids and drifted into the kitchen where the liquor was plentiful, and told doctor stories until the small hours. "Don't you guys ever talk about anything but medicine?"

"What else is there?" we might have said, but didn't. The truth was that we never could resist the temptation. No one mentioned politics, the weather, baseball, or religion—just medicine of the "I had a patient" kind.

In those days I was seldom home for dinner before seven o'clock; my wife accused me of just not being able to leave the hospital. She recited the line from *Wind in the Willows:* "Believe me, my young friend, there is nothing—absolutely nothing—half so much worth doing as simply messing about in boats." Only she said "hospitals," and I had to agree. Some of the hospital time was taken up by doctor talk also, but qualitatively different from the more imaginative 1:30 A.M. kitchen talk.

In the dedication to his book, *The Human Body*, (1927) Logan Clendening recalls to an old friend, Peter Thomas Bohan, how "we have shown one another many pathological specimens, ensconced temporarily to the horror of our respective wives, in our respective bathtubs, and we have sat over many a mug of grog far into many nights discussing battle, murder, and sudden death." He hopes "that we may both long be preserved to indulge these relatively innocent pastimes, ..."

Forty or fifty years ago books of doctor stories, mostly autobiographical, enjoyed a considerable popularity: Arthur Hertzler's *The Horse and Buggy Doctor* (1938), Gordon Seagrave's *Burma Surgeon* (1943), Walter Alvarez's *Nervousness, Indigestion, and Pain* (1943), and later, *Incurable Physician* (1963), and more recently, Lewis Thomas's *The Youngest Science: Notes of a Biology Watcher,* (1983) and Francis D. Moore's *A Miracle and a Privilege* (1995). As medicine became less clinical and more reductionist after World War II, I suspect that much of the popularity of this genre among nonmedical readers began to wane. Even for doctors calcium channels seemed less appealing than real hearts in real patients!

The Lost Art of Healing, by Bernard Lown, M.D., (Houghton Mifflin, 1996) is one the most recent doctor books, and should have a good sale. He writes of the older clincal era of first-half 20th century medicine, while telling of the remarkable advances in cardiology after 1950. The narrative is sustained by wonderful doctor stories of the "I had a patient" kind. Dr Lown and his mentor, Samuel A. Levine, M.D., are the chief personae, who demonstrate over and over the diagnostic and healing power of the history and physical examination, of the time spent with the patient, listening, touching, understanding, and making friends. I am saddened when I hear students in our introductory clerkships being told to take "focused" histories and do limited physical examinations based on the chief complaint. Those of Dr. Lown's and my generation long ago learned that the chief complaint is only the ticket for admission; it takes thoughtful, sympathetic listening and questioning to uncover the answer to our question, "What brings you in to see me today?" After a careful history and thorough examination, we should have the answer; a few tests should confirm the diagnosis. Lown makes short work of the excuse that a battery of blood tests, x-ray examinations, imaging, catheterizations are just smart, defensive medicine; rather they offer false promises of certainty; more than that, they are lucrative, and sometimes dangerous. An example is the indiscriminate use of the Swan-Ganz catheter.

> I return to my central thesis. Our health care system is breaking down because the medical profession has been shifting its focus away from healing, which begins with listening to the patient. The reasons for this shift include a romance with mindless technology, which is embraced in large measure as a means for maximizing income (pp. 156-7).

His doctor stories are best of all. Some stretch credulity, as when Dr. Levine diagnosed a developing massive anterior myocardial infarct by laying the palm of his hand over the precordium. Not only his sense of touch, but all of his other clinical senses were at work as well! Anyway, when we tell stories, especially stories about ourselves, some refining and altering is always called for. The poet Andrew Hudgins was right: "... autobiography dances on the shifting middle ground between fact and fiction, reportage and imagination, actuality and art...."

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ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

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MEDICAL NEWS CAPSULES

This Month's Reading in Review

TIMOTHY B. NORBECK

"Managed care companies are able to hide behind the fiction that they are not practicing medicine—that they are merely making determinations of what is covered by insurance. As a result, there is a much higher legal threshold of wrongdoing for a lawsuit against a managed care company than a malpractice suit against a doctor. Thus, if a doctor believes that a particular condition warrants emergency treatment, but the managed care guidelines say otherwise, the doctor can be held liable for malpractice, not the managed care company. The lawyer who devised that gambit deserves a special place in hell."

> Columnist Robert Kuttner, in criticizing HMOs for dodging medical liability and calling for managed care regulations.
>
> *Washington Post* (2 December 1996)

"There is a clear and growing pattern of the health insurance industry putting the bottom line ahead of the needs of patients ... shortened hospital stays, outpatient surgery and other practices of the health insurance industry ... have the potential to threaten the health of patients. Rather than address insurance industry practice on a case-by-case basis, Congress must address these issues on a more fundamental level. Comprehensive Commerce Committee hearings that examine the entire managed care industry, and its practices and procedures, would begin this process."

> U.S. Representative Marge Roukema (R-NJ), in calling for House Commerce Committee hearings on gag rules, drive-through mastectomies, emergency room denials, and other managed care issues.
>
> Roukema release (9 December 1996)

In what the *Washington Post* and others claim is a move designed to "head off legislative initiatives in Congress and in statehouses around the country that would put new restrictions on managed care," the American Association of Health Plans (AAHP) announced on 17 December that it would take steps to ban "gag" clauses and work to improve communications between patients, their physicians and health plans.... The move is the first step in the AAHP's "Patients First" initiative, which purports to improve doctor-patient communications, streamline administrative procedures, and boost outcomes research on services provided in the managed care setting.

> *Washington Post* (18 December 1996)

"You've got to admire their understanding of the political climate as well as the substance of what they've announced. If there's anybody who's less loved than the federal government, it's the insurance industry."

> Alliance Health Reform Executive Director Ed Howard, responding to the above AAHP "Patients First" initiative.
>
> *Washington Times* (18 December 1996)

More than 10 years into the managed care revolution, a new Towers Perrin survey suggests that Americans' ignorance about the health care system is more widespread than people think.... For example, more than half (55%) had not heard the term "managed care" or didn't know what it meant.... About a third (31%) were equally unfamiliar with the term "health maintenance organization."

> *Business & Health* (December 1996)

Dumb and Dumber: A disgruntled consumer in Houston, Texas, called the police in August to report being sold either bogus or very weak illegal drugs.... Unfortunately for her, it was weak, not bogus, crack cocaine, and she was arrested for possession.

> *Houston Chronicle* (15 November 1996)

American teens are taking up tobacco in alarming numbers.... Today, 19% of all eighth graders use tobacco regularly, up from 14% in 1991.... By tenth grade, about 28% are smoking.

> *Time* (25 November 1996)

Only in (North) America: Scott Byron Morrison, 47, in jail awaiting trial for the 1995 murder of his ex-wife, filed a $500,000 lawsuit against Calgary (Alberta) General Hospital in August.... Morrison claims that if the hospital had treated him properly for a mental illness, he would not have been released, and would not, four days later, have killed the woman with a shotgun blast.

> *Washington City Paper* (18 October 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

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Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

Methadone *vs* Naltrexone

To the Editor: The article, "The Rationale for Naltrexone Therapy as an Alternative Methadone Treatment for Opiate Addiction," by Dr. David L. Simon in November 1996 edition of *Connecticut Medicine* requires a response lest physicians in Connecticut are unaware of past and current experience with this approach to opioid dependence.

As early as 1972, Edward Brecher and the editors of *Consumer Reports* in their classsic work, "Licit & Illicit Drugs," reviewed the treatment of heroin addiction. It is stated that "several nonaddicting drugs have already been tried out. Among them are the narcotic antagonists: cycazoncine and naloxone are examples. An addict who injects heroin while on one of these drugs perceives no effect. Thus the antagonists, like methadone, are 'blocking agents.' But they are inferior to methadone in at least two other major aspects."

First, they do not assuage the postaddiction syndrome—the anxiety, depression and craving that recur for months and perhaps years after the last shot of heroin. The other major difference is that since the antagonists are not addicting, a patient can stop taking them at will. Most patients do stop taking them—and then promptly return to black-market heroin."[1]

In *Principles of Addiction Medicine*, it is stated: "Because the opioids' reinforcing properties are completely blocked, naltrexone is an ideal maintenance agent in the rehabilitation of opioid addicts. However, this optimistic theoretical perspective is contradicted by clinical reality, as reflected in treatment retention rates of only 20% to 30% over six months."[2]

I spoke to Dr. Thomas Payte of San Antonio, Texas, Chairman of the Committee on Methadone of the American Society of Addiction Medicine, about this issue. He said that in a group of detoxified, heroin-dependent people the rate of retention on Naltrexone treatment was 15% after two weeks on the medication. He added that those who have stayed on Naltrexone have been mandated to do so, ie, opioid-dependent physicians being monitored by the Physician Health Program in Texas. Business professionals and those on probation in the criminal justice system also have a higher rate of compliance due to strong economic and social incentives to remain drug-free.

Stanley Novick, the President of the National Alliance of Methadone Advocates in New York City, has stated that the vast majority of opioid dependent people detoxified from methadone either voluntarily or as a result of disciplinary termination will relapse to street drug use or go back on methadone maintenance within 10 months. Dr. Simon's follow-up patients using Naltrexone is only six months. My personal experience with terminated methadone patients is one of witnessing their profound pain and distress with all the economic and adverse social consequences coincident with return to street drug use or drug seeking through the medical-care system. A return to a comfortable and functional life style is achieved only after resumption of methadone administration. This is often difficult due to punishing attitudes of the methadone bureaucracy that prohibit or delay a return to participation in these programs.[3]

The pathology of neurotransmitter-receptor alteration induced by repetitive opioid use and manifested by the development of tolerance, relentless drug craving, and withdrawal symptoms, in all probability, persists despite the administration of "blockers" such a Naltrexone. In other words, the "postaddiction syndrome" described by Brecher continues unabated following rapid or prolonged detoxification by any method. This state of dysphoria promotes relapse to opioid use so frequently and frustratingly seen in this group of dependent people.

Methadone treatment remains as the single most effective way in which to return the opioid dependent person to a comfortable and functional life style. Greater accessibility to this form of drug treatment is necessary coupled with emphasis on retention in treatment programs. The numerous public health benefits from such an approach include a reduction in the risk for HIV and hepatitis B and C transmission since methadone given orally eliminates the need to inject.

Henry N. Blansfield, M.D.
American Society of Addiction Medicine
Advisory Board, National Alliance
of Methadone Advocates
Danbury

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Dr. Simon responds: In 1972, when editors of the lay magazine *Consumer Reports* reviewed treatments of heroin addiction, accelerated withdrawal under anesthesia had not yet come into practice. It was Loimer in Austria in 1977 who first developed such a technique. Also, the long-acting orally administered antagonist naltrexone was not available then. To suggest that methadone is a "blocking agent" like the opioid antagonist naltrexone, as Dr. Blansfield seems to suggest, reveals a significant lack of understanding of the basic pharmacologic principles relating to this matter.

Dr. Blansfield correctly points out that individuals motivated to stay on naltrexone maintenance, "ie, opioid dependent physicians, ...business professionals and those on probation in the criminal justice system," have a higher rate of compliance with naltrexone maintenance. It is clear then that success with naltrexone is dependent not only on the drug itself, but also on patient motivation and other psychosocial mechanisms of support. My article specifically states that "detoxification with naltrexone, in conjunction with psychosocial follow-up and naltrexone maintenance, has been shown to be promising therapy." This statement flies in the face of Dr. Blansfield's criticisms.

What Dr. Blansfield does not tell you about methadone, is that detoxification from it takes longer than for heroin, and the associated symptoms are probably more severe. An opiate withdrawal scale developed by Wang has been used in many studies relating to opiate withdrawal. The original Wang scale was developed using three groups, a control group who were addicted to barbiturates, a group of illicit opiate users, and a group maintained without withdrawal symptoms on methadone. Upon naloxone challenge, the barbiturate group had essentially a score of zero, the illicit opiate group had a mean score of about 10, and the methadone group had a score of 30.[1] In this landmark paper, withdrawal from methadone was three times as severe as withdrawal from illicit opiates! In addition, according to a 1996 lecture by Milton Burgess, M.D., withdrawal with clonidine alone (no naltrexone) can be completed for most opiates in about 10 days, and withdrawal with clonidine alone for methadone takes 28 days.[2] Furthermore, many patients withdrawing from methadone typically complain of severe "bone pain," which most heroin addicts do not experience. This may be related to difference in lipid solubility and protein binding between the two drugs.

When Dole and Nystander introduced the technique of using methadone to treat heroin addiction in the 1960s, the rationale was founded on the general principle that the time course and severity of the opioid withdrawal syndrome is related to the rate at which opioids are removed from opioid receptors. The thought was that with drugs with longer half-lives, such as methadone, peak symptoms occur later and then very gradually decline.[3] Experience had shown that peak symptoms do indeed occur later, but only because the entire withdrawal process is greatly lengthened. The FDA has recognized this and now endorses a period of withdrawal from methadone up to as much as 180 days. Why should such a long period of withdrawal be necessary if the drug itself is not so much more difficult to withdraw from?

Dr. Blansfield writes on his experience with methadone patients. Let me offer in response that many of my patients who seek to be detoxified from methadone, and who just can't without our help, tell me "if my doctor only told me what this would be like, I would have never started on methadone."

Finally, Dr. Blansfield, as a member of the Advisory Board of the National Alliance of Methadone Advocates, certainly has a stake in maintaining the status quo for treatment of heroin addiction. It is not my intention to imply that methadone treatment has no place, but rather to offer an alternative treatment for those patients who are unhappy with it. Unfortunately, there are many such patients. In fact, we have worked with methadone programs, via the patient as an intermediary, in cases where the patient weans down to the lowest tolerable methadone dose, then we have performed Intensive Narcotic Detoxification.^{SM} I would welcome the opportunity to work with Dr. Blansfield and his colleagues in other methadone programs in such a manner.

David L. Simon, M.D.
Mansfield Center

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Response to Dr. Massey's "Neurasthenia, Psychasthenia, CFS, and Related Matters"

Letter to the Editor: Your article in *Connecticut Medicine* (October 1996, pp 627-8) on "Neurasthenia, Psychasthenia, CFS, and Related Matters" was a rather insensitive handling of a fairly specific illness called chronic fatigue syndrome. Neurasthenia is only one of the major symptoms of this syndrome and is no "proxy" or equivalent of CFS. Most discerning physicians in the general practice of medicine can distinguish most cases of CFS from psychasthenia. Dr. William Osler would have been quite disappointed by your grouping all of these problems together in a haphazard way today.

Your treatise appeared to be a literary endeavor in which you took liberties by lumping neurasthenia, psychasthenia, chronic fatigue syndrome, lassitude, and asthenia as one ball of wax. Harrison's *Principles of Internal Medicine* was just as superficial and incorrect as your thesis. Had you read the early publications in 1958 or 1959, by Shelikoff in the *New England Journal of Medicine* regarding two outbreaks, one in Punta Gorda, Florida, and one in Iceland, and then subsequent scientific handling of this matter after that time, I think you would have been more appreciative of this syndrome, often termed chronic fatigue syndrome, Icelandic Fever, or Neuromyasthenia. The patients with this particular syndrome called chronic fatigue syndrome, need the support of concerned caring and dedicated physicians, not the offhand dismissal of this problem to a waste basket of nonconcern.

Julian Mandell, M.D.
Bloomfield

The editor responds: My "Reflections" on chronic fatigue syndrome (CFS) was hardly meant to be either a scientific paper or a treatise, but then for a disease entity for which there are no specific tests, no known etiology, and no demonstrable pathology, science is out of place! And as for nosology, I would be hard pressed either to define or describe CFS, psychasthenia, asthenia, and neurasthenia.

Sir William Osler stands close to the top of my hagiographical list of physician heroes; I suspect from what I know of him, that he would agree with me, although neither of us can ever know in this life!

I trust I was not being insensitive; there is "a reality that we all recognize," as I wrote, and it may require more of our skill as healers than as scientific physicians to treat with empathy those of our patients who suffer from it.

Robert U. Massey, M.D.
Editor

Book Review

The Prostate Cancer Answer Book
An Unbiased Guide to Treatment Choices.
By Marion Morra and Eve Potts, 263 pp.
Foreword: Dr. Vincent T. DeVita, Jr., Director of the Yale Cancer Center, vii. Illustrations: Hilda R. Muinos.
New York: Avon Books, a division of the Hearst Corporation, 1996. Price: $12.50. ISBN 0-380-78564-1

This a most timely text. It comes along just as many Americans are beginning to wake up to the growing frequency and importance of this disease. Even more impressive is the fearless attention to detail with medical jargon explained "on the go" as only very experienced writers in this field could do. The complex issues are covered in a carefully organized fashion that reads surprisingly easily. Wherever several options are involved the authors meticulously detail them with a slight bias toward the teaching center. (Understandable since they are closely connected to such a center.)

Starting with their coverage of the PSA test and progressing to the various options in each situation, they have an uncanny knack of hitting the best balance point from my point of view as a primary caregiver. I learned a lot from this little gem of a text, and I feel it could be invaluable to most doctors who refer rather than treat such patients.

It is clearly an invaluable resource for the patient and his spouse, although it may overwhelm some who are not prepared for the relentless detail. For them there are little vinettes of actual patient cases to draw upon. I found these especially well chosen, particularly with regard to the cases with less-than-perfect outcome.

These two authors have done a great public service, in my opinion, in offering a timely and frank text that is easily understood by the layperson, yet equally valuable to the professional who is a nonspecialist in urology.

Peter E. Barwick, M.D.
Granby

IN MEMORIAM

CORWIN, DANIEL B., State University of New York College of Medicine, Syracuse, 1932. Dr. Corwin opened his general practice in the Bronx, New York, in 1934, moving to Norwalk in 1943. He was an attending physician at Norwalk Hospital. Dr. Corwin was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Corwin died 25 December 1996 at the age of 88.

D'AMBRUOSO, DOMINIC C., Columbia University College of Physicians and Surgeons, 1936. Dr. D'Ambruoso opened a general practice of medicine in Derby in the late 1930s, later becoming an anesthesiologist affiliated with Hartford Hospital where he remained until his retirement. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. D'Ambruoso died 25 December 1996 at the age of 86.

D'ANDREA, FRANK H., Yale School of Medicine, 1929. Dr. D'Andrea practiced anesthesiology in Stamford from 1935 to 1974. He was a director of the anesthesia departments at both Stamford and St. Joseph's hospitals and was a consultant in anesthesia at Greenwich Hospital and Norwalk Hospital. Dr. D'Andrea also served as chairman of the medical board at Stamford Hospital and Southwestern Connecticut Rehabilitation Center and as chairman of the Stamford Health Commission. He was president of the medical staff at St. Joseph Hospital, the Stamford Medical Society, and the Connecticut Society of Anesthesiologists. After his official retirement, Dr. D'Andrea volunteered as a medical missionary with the Catholic Medical Mission Board for 10 years teaching anesthesia and practicing medicine in New Guinea, Guyana, and Colombia. He was a member of the Fairfield County Medical Association, where he served as a delegate to the CSMS House of Delegates, the Connecticut State Medical Society, serving on the Council in 1963, and as a member of various committees from 1963 to 1973, and the American Medical Association. Dr. D'Andrea died 27 November 1996 at the age of 90.

DELGADO-FOURZAN, ENRIQUE, Facultad de Medicine de la Universidad Nacional Autonoma de Mexico, 1943. Dr. Delgado-Fourzan was appointed staff psychiatrist at the Institute of Living following a Fellowship at the Institute in 1944. In 1951, he was appointed director of the Somatic Therapy Department. In addition to serving as therapist to patients, Dr. Delgado-Fourzan provided training to medical residents, nursing staff, nursing students, and technicians. Dr. Delgado-Fourzan was a member of various state and national psychiatric associations as well as a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Delgado-Fourzan died 22 December 1996 at the age of 78.

DOCK, DONALD STONE, John Hopkins University School of Medicine, 1954. Dr. Dock practiced cardiology in New Haven for 36 years, most recently with the Connecticut Heart Group. From 1963 to 1981 he was chief of medicine at The Hospital of St. Raphael, except for 1972 to 1974, when he was chief of medicine at the Atomic Bomb Casualty Commission in Hiroshima and Nagasaki, Japan. Dr. Dock was director of the coronary care unit, director of the Take Heart cardiac rehabilitation program, and director of the electrocardiography department at St. Raphael's Hospital. He was clinical professor of medicine at Yale University School of Medicine and an associate fellow at Berkeley College. Dr. Dock was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Dock died 3 December 1996 at the age of 69.

HAUGH, JOHN D., New York University School of Medicine, 1952. Dr. Haugh, an orthopaedic surgeon in Hartford since 1960, served on the staffs of St. Francis Hospital and as chairman of the orthopaedic department from 1982 to 1985, the Children's Hospital, Hartford Hospital, and Mount Sinai Hospital. In addition to membership in local, state, and national orthopaedic societies, Dr. Haugh was a member of the Hartford County Medical Association where he served as a delegate to the Connecticut State Medical Society from 1966 to 1973, the Connecticut State Medical Society where he was active on many committees from 1971 to 1982, and the American Medical Association. Dr. Haugh died the weekend of 2 November 1996 at the age 68.

JACK, J. LOUIS, Yale University School of Medicine, 1923. Dr. Jack was a member of the surgical department of the former Grace New Haven Hospital retiring in 1950 and was also in private practice. Prior to entering the medical profession, Dr. Jack taught high school science and coached. He was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. Jack died 19 November 1996 at the age of 103.

PARENTE, LEONARD, Emory University School of Medicine, 1931. Dr. Parente was director of health for the town of Hamden for 28 years and was the first medical director of the state Department of Welfare. Early in his career, Dr. Parente maintained a private practice in pediatrics. He later earned a master's of public health degree from Yale University and became a lecturer at the Yale School of Public Health. Dr. Parente was president of the Connecticut Public Health Association and a fellow of the American Public Health Association. He served on numerous boards and committees related to public health. Dr. Parente was a member of the New Haven County Medical Association, the Connecticut State Medical Society where he was active on many committee's relating to public health, school health, and eye care from 1962 to 1980, and the American Medical Association. Dr. Parente died 9 November 1996 at the age of 89.

PRESTLEY, WILLIAM F., Harvard Medical School, 1940. Dr. Prestley practiced internal medicine in Hartford and was affiliated primarily with Hartford Hospital. He served as the medical director of Avery Heights Nursing Home. Dr. Prestley was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Prestley died 18 December 1996 at the age of 81.

RHOADES, EARL J., Yale University School of Medicine, 1943. Dr. Rhoades, a specialist in orthopaedic surgery in New Haven for 32 years, retired from New Haven Orthopaedic Surgeons, P.C. in 1980. He was associated with Yale New Haven Hospital, The Hospital of St. Raphael, and the former Newington Children's Hospital, and was also on the clinical faculty of Yale School of Medicine. Dr. Rhoades was a member of the New Haven County Medical Association and the Connecticut State Medical Society where he served on a Relative Value Study Committee on Orthopaedics from 1962 to 1967 and The Committee on Accident Prevention and Emergency Medical Services from 1970 to 1978. Dr. Rhoades died 8 October 1996 at the age of 83.

RYAN, WILLIAM F., JR., Tufts University School of Medicine, 1947. Dr. Ryan practiced obstetrics and gynecology in the Hartford area for over 45 years. He was senior attending obstetrician and gynecologist at St. Francis Hospital and Medical Center and served as an assistant clinical professor at the University of Connecticut School of Medicine. Dr. Ryan was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Ryan died 30 November 1996 at the age of 73.

SAUNDERS, GEORGE R., Cornell University Medical College, 1941. Dr. Saunders maintained a general practice in Old Saybrook from 1946 until his retirement in 1960. He helped to establish a medical clinic near his home in the Bahamas. Dr. Saunders was a member of the Middlesex County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Saunders died 18 November 1996 at the age of 81.

SMITH, JAMES J., University of Maryland School of Medicine, 1971. Dr. Smith practiced psychiatry for many years in Baltimore, Maryland, Richmond, Virginia, Worcester, Massachusetts, and in Mansfield for the past 14 years. He was a member of the Windham County Medical Association and the Connecticut State Medical Society. Dr. Smith died 19 October 1996 at the age of 55.

STANKARD, WILLIAM F., Jefferson Medical College of Thomas Jefferson University, 1938. Dr. Stankard, a surgeon, maintained a private medical practice in Stamford for 38 years. He was affiliated with and was past president of St. Joseph's Medical Center and also the Stamford Hospital. Dr. Stankard was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, where he served on the Cancer Coordinating Committee from 1962 to 1974, and the American Medical Association. Dr. Stankard died 23 November 1996 at the age of 85.

TIERNEY, LAWRENCE M., University of Maryland School of Medicine, 1936. Dr. Tierney maintained a general practice in West Haven for 55 years, retiring in 1986. He was a former medical examiner, town health officer, and police surgeon in West Haven. For 20 years he was the Notre Dame High School football team doctor. Dr. Tierney was a member of the New Haven Medical Society, the Connecticut State Medical Society and the American Medical Association. Dr. Tierney died 26 December 1996 at the age of 88.

WAKEMAN, EDWARD M., University of Pennsylvania School of Medicine, 1956. Dr. Wakeman practiced pediatrics in Guilford for 33 years and was an associate clinical professor of pediatrics at Yale School of Medicine. For the last 12 years, Dr. Wakeman served as the medical advisor to the Guilford public schools and served on the Guilford Board of Education. He was a member of the New Haven County Medical Association and the Connecticut State Medical Society. Dr. Wakeman died 12 October 1996 at the age of 65.

HEALTH SCIENCES AND

The Second Annual Sports Injuries Seminar

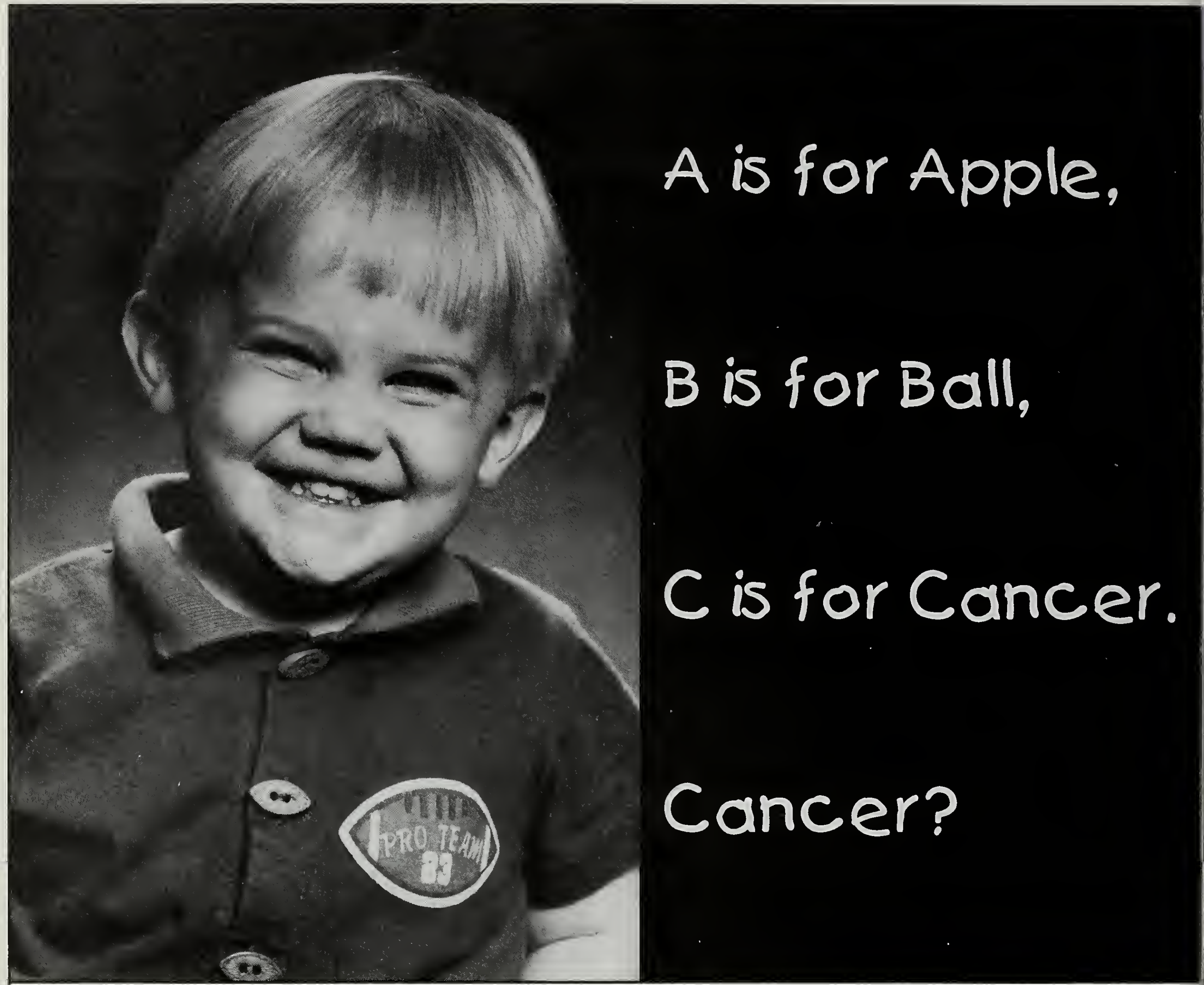
Presented by The William W. Backus Hospital Trauma Department

will be held 26 April 1997 at the Foxwoods Resort Casino

This year's topic is *Upper Extremity Injuries*

Keynote speaker is Arthur Pappas, M.D.,
Professor and Chairman,
Department of Orthopedics and Physicial Rehabilitation,
University of Massachusetts Medical Center
Medical Director, Boston Red Sox

For more information call 860-889-8331 ext. 3220



Each year, more than 6,000 children like Adam learn all about cancer and other catastrophic illnesses when they're stricken with deadly diseases. Fortunately, these children have a fighting chance at surviving cancer — the No. 1 killer disease of children — because of strides St. Jude doctors and scientists are making every day in treatment and research. With your support, St. Jude Children's Research Hospital is helping children all over the world live.

To find out more about St. Jude's life-saving work, write to:

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Danny Thomas, Founder

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

OPPORTUNITIES FOR PRACTICE

FAMILY PRACTICE

Seeking a BC/BE family practice physician to join an active family practice in Stamford, Connecticut. This service area allows for tremendous growth potential. The 4,000 sq.ft. office is located near the hospitals. Competitive compensation package includes full benefits and the opportunity for partnership. Additional benefits include call coverage, and a network alliance with Connecticut Health Enterprise. Enjoy living on the shores of Long Island Sound, in this waterfront community with beautiful beaches, rolling hills, and charming New England neighborhoods. *Childcare* magazine has listed Stamford as one of the five best places to raise children in the United States. Top ranked school systems and low crime. Only 40 miles to New York City. Contact: Tammy Pavlock or Barbara Volk at 1-800-521-6780 or send CV to: 401 Monroe Turnpike, Monroe, CT 06468. Fax: 203-452-2200.

Charming family practice office/home located in the beautiful New England coastal community of Trumbull, Connecticut. This well established solo practice with over 3,000 patients is in a scenic residential area. The retiring physician is the chairman of Family Medicine Department and seeking a BC/BE family practitioner who will provide only the highest quality of care to his patients. Picture living in this New England coastal community with abundant recreational activities and excellent schools. Easy access to the local airport and metropolitan amenities. Benefits: call coverage, academic affiliations, and network alliance with Connecticut Health Enterprise. Contact Tammy Pavlock or Barbara Volk at 1-800-521-6780 or sent CV to: 401 Monroe Turnpike, Monroe, CT 06468. Fax: 203-452-2200.

INTERNAL MEDICINE

Private practice opportunity for internist, cardiologist or gastroenterologist. Must be BC/BE. Send CV to: CSMS c/o IM/JM.

Western Connecticut—1-1/2 hours from New York City. Our well established four-person Primary Care practice emphasizes patient care, teaching and quality of life. Need to replace retiring partner with a BC internist who will also participate in the Yale Primary Care teaching program. Our town was voted "Best Place to Live" by *Connecticut Magazine*. Please respond to CSMS c/o IM/SM.

Internists, family physicians, or psychiatrists wanted for inpatient substance abuse treatment facility in Newtown, Connecticut. Twenty-three beautiful acres, top staff, excellent working conditions and benefits. Send resume to: Executive Director, Cornerstone of Eagle Hill, 32 Alberts Hill Rd., Newtown, CT 06482; telephone (800) 233-9999, ext. 3101.

MEDICAL DIRECTOR–OCCUPATIONAL MEDICINE

Excellent opportunity for a BE/BC IM, GP, ER, OM, or GS to join this rapidly growing Occupational Medicine practice that is completing its Connecticut expansion. Clinical or administrative responsibilities and experience in Connecticut worker's compensation, ADA and soft tissue injury management required. Extremely competitive salary, bonus and benefits package offered, positions available immediately. For more information, send CV to the attention of Paula Wood, HR Administrator, Industrial Health Care Company, 1095 Day Hill Rd., Windsor, CT 06095.

NEUROLOGY

Neurologist to join neurosurgical group. Must be BC/BE and have experience in Neurodiagnostic—NCV, EEG, EMG, EP, etc. Send CV to: CSMS c/o N/JM.

HEALTH SCIENCES AND

NEUROSURGERY

Neurosurgeon to join neurosurgical group in Connecticut. Must be BC and have a special interest in spinal surgery. Excellent opportunity for partnership. Send CV to: CSMS c/o NS/JM.

ORTHOPEDIC SURGERY

Orthopedic Surgeon to join neurosurgical group. Must be BC/BE and have a fellowship in spinal surgery. Send CV to: CSMS c/o OS/JM.

PART-TIME

Major Life insurer seeks physicians for part-time consulting. Required skills include EKG, ExEkg and basic CXR interpretation. On the job training in Medical Risk analysis for Life Insurance provided. Send resume to L. Alexander, M.D., CIGNA Individual Insurance, Hartford, CT 06152-2104.

PEDIATRICS

Exceptional opportunity to join a pediatric practice of four BC/BE pediatricians. Located in shoreline community, five miles from Yale-New Haven Medical Center, our chief hospital affiliation. Salary $120,000/year, 1:4 coverage. Malpractice insurance included. Partnership available. Part-time position available. Call: (203) 248-4846, any evening after 8:00 p.m.

The Department of Pediatrics at the Hospital of Saint Raphael is seeking a full-time pediatrician with a commitment to teaching and clinical care. Saint Raphael's is a 480 bed community teaching hospital affiliated with Yale University School of Medicine and sponsored by Yale pediatric residents, Yale medical students and physician assistants. The Department of Pediatrics is an integrated team of five pediatricians, six nurse practitioners, and four physician assistants. Saint Raphael's offers a competitive salary, as well as medical, dental, liability, disability, education, and retirement benefits. For further information, please contact: Richard S.K. Young, M.D., M.P.H., Chair, Department of Pediatrics, Hospital of Saint Raphael, 1450 Chapel St., New Haven, CT 06511, telephone (203) 789-3499, fax (203) 789-4110.

Main Street Pediatrics is seeking dynamic BC/BE pediatricians to join the staff of this growing group practice. The offices are located in Fairfield County, Connecticut. This group provides the highest quality of care and has an excellent reputation within the community. The call will be approximately 1:6. Enjoy a four day work week with an excellent compensation and benefits package. Additional benefits: F/T or P/T schedule, academic affiliations, partnership with no buy in, and network alliance with Connecticut Health Enterprise. Move to this beautiful New England coastal community and experience the best quality of life. This suburban area is abundant in recreational activities and only 90 minutes to the amenities of NYC. Contact Tammy Pavlock or Barbara Volk at 1-800-521-6780 or send CV to: 401 Monroe Turnpike, Monroe, CT 06468. Fax: 203-452-2200.

PRIMARY CARE

Currently seeking full-time/part-time (IM/FP) BC/BE physician with focus on women's issues to join a multi-service medical facility providing outpatient preventive medicine and primary care exclusively to women. The medical practice consists of two full-time primary care physicians, an allergy and asthma specialist, an adolescent medicine specialist, a nurse practitioner in adult medicine and gynecology, a nutritionist with individual weight loss and cholesterol reduction programs, three psychotherapists, ACR accredited mammography, ultrasound, massage therapy, and adjoining laboratory. Women's Care is proud of its comprehensive approach to medical care and health care maintenance and welcomes you to join our team of health care professionals committed to women's issues and education. For more information, contact: Caryn Nesbitt, M.D., Medical Director, 85 Poheganut Dr., Groton, CT 06340, (203) 448-6303.

PULMONARY MEDICINE

Seeking full-time BC/BE Pulmonologist to join a rapidly growing Pulmonary Practice in southeastern Connecticut. Excellent opportunity leading to full partnership. Please send CV to: CSMS c/o PM/NL.

PHYSICIANS WISHING TO PRACTICE IN THE STATE OF CONNECTICUT

INTERNAL MEDICINE

Available immediately. Licensed in Connecticut, and New York. Passed National Boards. American Board eligible. M.D. at Alexandria University Medical School, Egypt. Internship, residency and fellowship at Jewish Memorial Hospital, New York. Would like to join a group or industrial practice with interest in quality, cost effective medical care. Please respond to CSMS c/o IM/JM

Available March 1997. Licensed in Virginia, Connecticut and New York (in process). Passed National Boards. American Board eligible. M.D. at Dow Medical College/Civil Hospital, Karachi, Pakistan. Internship and residency at Kingsbrook Jewish Medical Center, Brooklyn. Additional training in Critical Care/Anesthesia at Brookdale Hospital, Brooklyn. Would like to join a group or associates practice, preferably with a hospital affiliation. Please respond to: Syed Hussain, Z. M.D., 9123 Seaview Ave., Brooklyn, NY 11236; telephone (718) 251-7237.

PEDIATRICIAN

Connecticut licensed, board certified experienced pediatrician, familiar with medical Spanish, seeking out patient/ambulatory practice, flexible schedule part-time position or locum tenens work (one day to several weeks) to suit your need. Please respond to: Usha Reddy, M.D., F.A.A.P., 638 Fern St., West Hartford, CT 06107; telephone (860) 521-5285.

PAID CLASSIFIED ADVERTISING

All PAID classified advertising orders, correspondence, and payments should be directed to: CONNECTICUT MEDICINE, Classified Department, 160 St. Ronan Street, New Haven, CT 06511, Tel. (203) 865-0587. The Classified rates are as follows: $60.00 for 25 words or less; plus $1.00 each additional word. For confidential answers, the cost is $3.00 per insertion, sent in care of CONNECTICUT MEDICINE. Ad copy must be typewritten, double spaced, with payment, and delivered no later than the first day of the month preceding the month of issue.

ACROSS FROM DANBURY, CONN. HOSPITAL PROFESSIONAL OFFICE CONDO SALE OR LEASE

Upscale 1,137 sq.ft. six rooms includes built-ins, lavatory, and kitchenette. REDUCED $159,900 or $1,950/mo. PAUL VALERI COMMERCIAL (203) 792-3888.

WANTED—OB-GYN

Specialists for Simsbury office. Immediate opportunity. Call (860) 651-3551 days and (860) 673-3666 evenings.

WANTED—Internal Medicine

Medical specialist, orthopedic surgeon, for Simsbury / Avon office complex. Call (860) 651-3552.

NIH 'Grand Rounds' Television Series Launches in January

"Bench to Bedside' to Deliver Latest Clinical Findings and Give Physicians Opportunity to Interact with NIH Experts

Physicians throughout North America are encouraged to become a part of this interactive telecommunications effort through either their institution or practice. For CenterNet subscription information write: CenterNet, c/o HMTV, 1800 Diagonal road, Suite 600, Alexandria, VA 22314 or call Tom Shaw at 703-684-4415.

The interactive programs, to be aired the second Wednesday of each month, will be offered to institutions outside of academic health centers, including VA and community hospitals. In its inaugural season, ten programs covering 20 topic areas will be aired. Category 1 Continuing Medical Education (CME) credit will be offered. NIH Grand Rounds is the latest innovative health program to be offered by CenterNet which broadcasts other health policy and CME specials throughout the year.

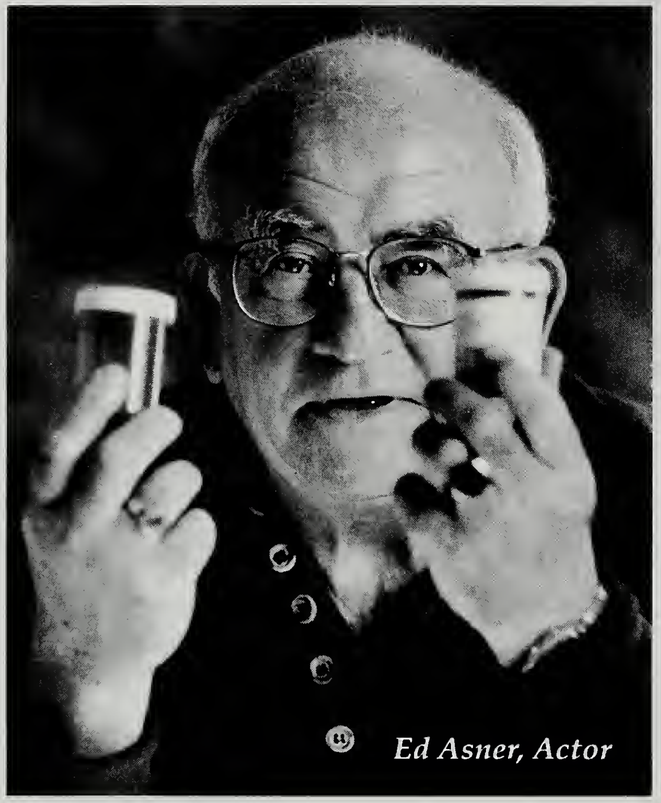
The AHC is a national nonprofit association whose membership is composed of the health education professions, research, and clinical service complexes of the universities of the United States and Canada.

$100 Million in Donated Supplies

In 1997, corporations will donate over $100 million worth of their new products to nonprofit organizations and schools. Openings currently exist for qualified recipients in this nationwide program. Donated supplies include office products, computer software and accessories, cleaning supplies, toys and games, clothing, personal care products, tools, maintenance items, and holiday party supplies. Recipient groups pay dues ranging from $255 to $595, plus shipping and handling, but the merchandise themelves are FREE. Nonprofit administrators select what they need from 300-page catalogs issued every 10 weeks. According to the program administrator, participants receive an average of $2,000 worth of new goods per catalog. A moneyback guarantee is issued to all new members. For a free information kit on this 19-year-old program, phone the nonprofit National Association for the Exchange of Industrial Resources: 1-800-562-0955.

HEALTH SCIENCES AND

Attention: Physicians



Ed Asner, Actor

Have your patients' medicines had a check-up?

Many of your patients take several different medicines every day. Separately each one works well. But if they take two or more different medicines in combination without checking with you to be sure they work safely together, they can sometimes be harmful...even dangerous.

The next time you prescribe a medicine, ask your patients:

"What other prescription and nonprescription medicines are you taking?"

YES! Please send me free information to use when talking with my patients about their multiple medicine use.

Name

Address

City State Zipcode

Mail to:
NCPIE
666 Eleventh Street, NW
Suite 810
Washington, DC 20001

OR FAX:
(202)638-0773

A public service message from the National Council on Patient Information and Education (NCPIE) and the U.S. Administration on Aging

Connecticut State Medical Society

Distinguished Citizen Award

Nomination Form

To be completed and returned to:

Connecticut State Medical Society
Committee on Public Affairs
160 St. Ronan Street
New Haven, CT 065111

Please complete both sides of this nomination form. All nominees must meet the following criteria, as approved by the Connecticut State Medical Society Council:

- Be A Connecticut Citizen
- Contribute to the Quality of Life
- Make a Significant Humanitarian Contribution
- Be Nominated By a CSMS Physician Member

ALL NOMINATIONS MUST BE SUBMITTED TO CSMS BY FEBRUARY 14, 1997.

(please print or type)

Nominee Information

Name______________________________

Address (home)______________________________

City ________________ Zip __________ Telephone ________________

In your own words, please describe (in 200 words or less) why this nominee should be considered for the Connecticut State Medical Society's Distinguished Citizen Award.

(cont. on back)

Nominee's Name: ____________________

Civic Contributions/Community Involvement

Please complete the following (print or type). Include all organizations which the nominee has served. If you need additional space, please duplicate this page. (Note: The CSMS may need to contact the organizations for clarification and verification.)

Name of Organization ____________________
President or Director ____________________

Address ____________________

City ____________________ State ____________ Zip ____________

Telephone No. ____________________

Function of Organization (briefly describe) ____________________

Type of Service(s) ____________________

Year(s) of Service ____________________

* * *

Name of Organization ____________________
President or Director ____________________

Address ____________________

City ____________________ State ____________ Zip ____________

Telephone No. ____________________

Function of Organization (briefly describe) ____________________

Type of Service(s) ____________________

Year(s) of Service ____________________

* * *

Nomination Submitted by:

Name ____________________

Address ____________________

City ____________________ Zip ____________________

Telephone ____________________ Fax ____________________

Connecticut Medicine

Vol. 61, No. 2 *The Journal of the Connecticut State Medical Society* February 1997
160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587

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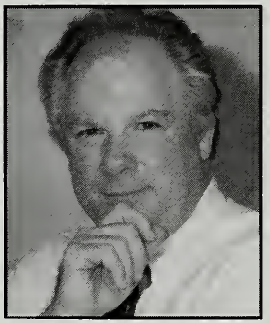
HEALTH SCIENCES AND

Are you prepared to accep
a lower standard of livin
in retirement?



Probably not. But most do not realize that they'll still need 80% of their current incor in retirement.

If you would like to start a retirement plan help get yourself on track for retirement, o get a second opinion on your existing retirement portfolio, ***contact me today***.

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Hypertension and Hypokalemia: Unusual Syndromes

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ABSTRACT—Secondary hypertension accounts for a minority of all cases of hypertension. Certain clues in the patient's medical history and laboratory parameters may help identify the rare patient with secondary hypertension. The association of hypertension with hypokalemia and renal potassium wasting should raise one's suspicion for a state of mineralocorticoid excess. The clinical syndrome of hypertension and hypokalemia may be related either to a high renin state, such as renovascular disease, or to a low renin state, such as primary hyperaldosteronism, adrenal enzyme defects, certain familial syndromes, and licorice ingestion. Over the past decade, a genetic basis has been identified for apparent mineralocorticoid excess (AME) syndrome, Liddle's syndrome, and glucocorticoid remediable aldosteronism (GRA). This brief review focuses on a few of the unusual conditions which cause a true or apparent mineralocorticoid excess state, and summarizes the clinical presentation, pathogenetic mechanism, and treatment of these diseases.

Abbreviations Used in Text

AME = apparent mineralocorticoid excess
GRA = glucocorticoid remediable aldosteronism
PRA = plasma renin activity

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Introduction

HYPERTENSION is a common health problem which affects millions of Americans. It has significant cardiovascular and renal consequences. The vast majority of cases are due to essential hypertension; however, a small percentage of patients have an identifiable etiology for their hypertension. The association of hypertension, especially when severe and early in onset, with hypokalemia raises the possibility of a mineralocorticoid excess state.[1] The entities which cause mineralocorticoid excess states can be subdivided into those with high *vs* low levels of renin (Fig. 1). The latter can be further classified into those with high levels of aldosterone (primary hyperaldosteronism) and those with high levels of other endogenously produced or exogenously administered mineralocorticoids. This brief review focuses on a few of the rare conditions that cause a mineralocorticoid excess state. These include: congenital apparent mineralocorticoid excess (AME), licorice ingestion (acquired AME), Liddle's syndrome, and glucocorticoid-remediable aldosteronism (GRA). Except for licorice ingestion, a genetic basis for each of these conditions has been identified.

Congenital Apparent Mineralocorticoid Excess

The syndrome of apparent mineralocorticoid excess is a rare juvenile disease characterized by hypertension, hypokalemic metabolic alkalosis, and suppression of the renin-angiotensin-aldosterone system. Fewer than 30 cases have been reported since its initial description. It has been reported in siblings and is believed to be genetic.[2,3]

In 1977 New and colleagues described a three-year old child with failure to thrive, hypertension, and hypokalemia.[4] Although the clinical features were suggestive of excessive mineralocorticoid activity, plasma renin and

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aldosterone levels were very low. This patient also exhibited a low urinary excretion of certain steroid metabolites. In addition, both hypertension and hypokalemia were aggravated by adrenocorticotropin (ACTH) administration. The authors postulated that an unidentified steroid with mineralocorticoid action was responsible for the clinical syndrome. In 1979, Ulick and coworkers showed that this condition was associated with decreased oxidation of active cortisol to inactive cortisone.[5] An enzyme deficiency (see below) in affected individuals resulted in this abnormal cortisol metabolism. In 1985, Edwards confirmed that cortisol, rather than an "unknown steroid," was responsible for the excessive mineralocorticoid effect.[6]

Pathogenesis.—In vitro the mineralocorticoid (type I) receptor is nonspecific, and has equal affinity for both aldosterone and cortisol. *In vivo,* however, it appears to be aldosterone-selective, especially in certain organs such as the kidney. This selectivity is mediated by 11β-hydroxysteroid dehydrogenase (11-βOHSD), a microsomal enzyme complex that catalyzes the reversible conversion of cortisol to cortisone (Fig. 2). This enzyme complex is found principally in the kidney and the liver, and is a composite of two enzymes: 11-dehydrogenase and 11-ketoreductase.[7] In the normal kidney, active cortisol is converted to metabolically inactive cortisone, which does not bind to the type I receptor. Therefore the more abundant aldosterone "preferentially" binds to this receptor in the kidney while cortisol binds to only a minor degree.

Conversely, a deficiency or inhibition of 11-βOHSD would allow the excess cortisol to act as a surrogate mineralocorticoid at the type I receptor. Attenuated metabolism of cortisol also results in an increased half-life of this steroid, but plasma concentration remains normal because of reduced daily cortisol production rate induced by the negative ACTH feedback mechanism. As noted by recent reports in nine of 10 kindreds with this disorder, a mutation in the gene for the kidney isoform of this enzyme results in decreased enzyme activity.[8,9] In rare instances, the reduced metabolic clearance of cortisol may not be due primarily to 11-βOHSD deficiency. In 1989 Ulick described a 17-year-old female with features of AME, but in whom 11β-OH oxidation of cortisol was not impaired, as reflected by a normal ratio of cortisol: cortisone metabolites in urine.[10] This type 2 variant is thought to occur from an impairment in ring A reduction of cortisol. Cortisol would then bind the type I receptor and cause the syndrome of AME.

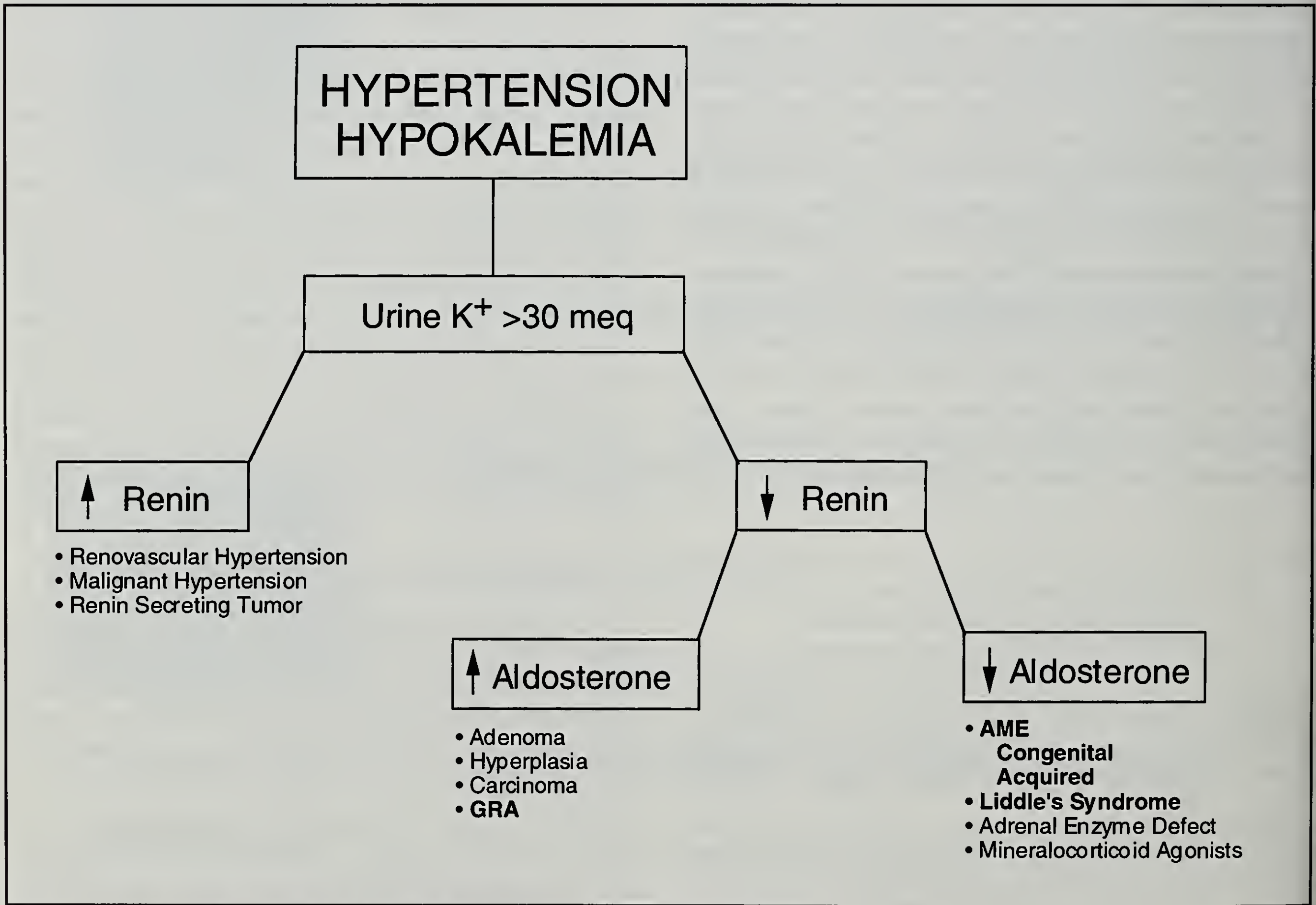


Figure 1.—Differential diagnosis of hypertension associated with hypokalemia

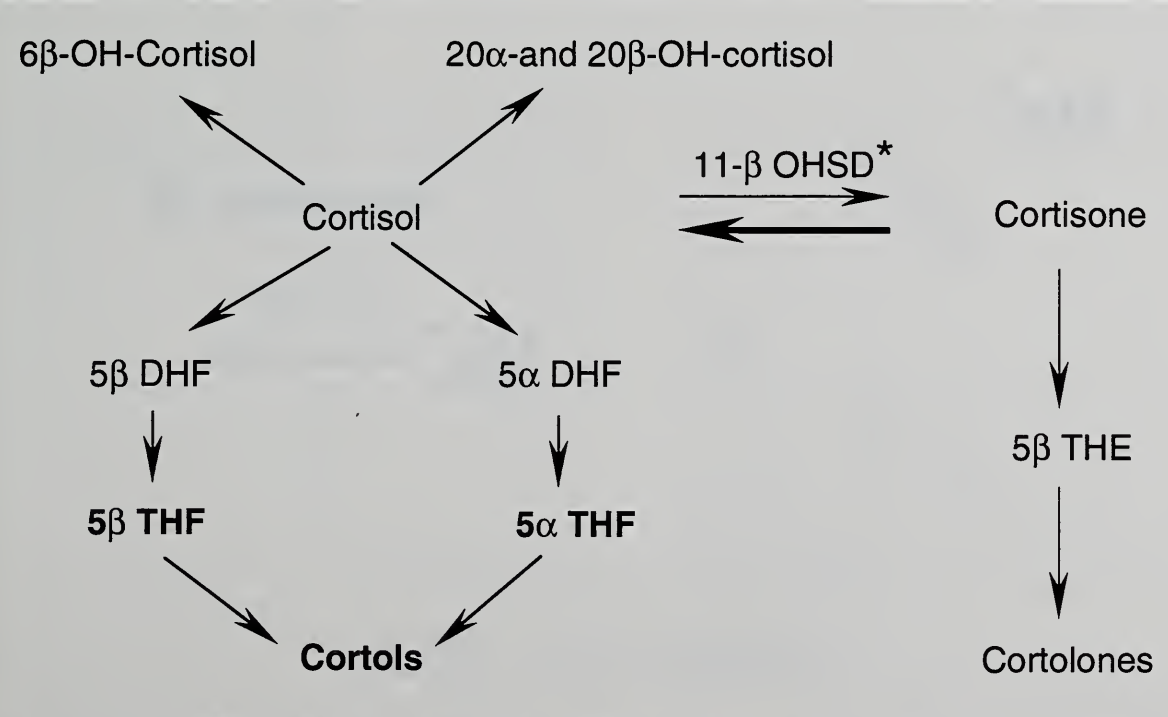
Clinical and Laboratory Features.—Symptoms manifest in the first year of life, and include thirst, polydipsia, polyuria (secondary to hypokalemia-induced nephrogenic diabetes insipidus), vomiting, and dehydration.[11] Frequently, these children exhibit poor appetite and weight gain, impaired growth, and general failure to thrive. These patients are often severely hypertensive and may exhibit hypertensive end-organ damage, such as cardiomegaly, intracerebral hemorrhage, and retinopathy. AME can be fatal if untreated and death often occurs from the complications of hypertension and hypokalemia.

Laboratory evaluation often reveals hypokalemia and metabolic alkalosis, suggestive of a state of mineralocorticoid excess (Table 1). However, plasma renin activity (PRA) and aldosterone levels typically are low or undetectable. Cortisol levels are normal, while levels of corticosterone and 11-deoxycorticosterone are normal or low.[11]

Measurement of excreted urinary steroids by gas chromatography or mass spectrometric analysis establishes the diagnosis of AME. Because 11-βOHSD deficiency impairs the normal conversion of cortisol to cortisone, there is an increased proportion of cortisol metabolites (tetrahydrocortisol [THF] and 5α-tetrahydrocortisol [5αTHF]) in the urine as compared with cortisone metabolites (tetrahydrocortisone [THE], cortolones). In general, the ratio of urinary THF + 5αTHF/THE is greater than seven in affected individuals.[11] However, Ulick and colleagues have reported a Type 2 variant of AME in which the defect may not be due to 11-βOHSD deficiency.[10] In this rare condition there is a reduced metabolic clearance of cortisol, but the urinary THF + 5αTHF/THE ratio remains normal. This ratio is normal because the conversion of cortisol to cortisone is unimpaired and cortisone metabolites are not decreased.

Alternatively, definitive establishment of defective 11-βOHSD can be obtained by administering 11α-[^{3}H] cortisol and determining the release of tritium by measuring tritiated plasma water.[5] When cortisol is oxidized by 11-βOHSD, water is released into the plasma. When cortisol is labeled with tritium (11α-[^{3}H] cortisol), tritiated water is released and can be measured in the plasma as an index of 11-βOHSD activity. In normal subjects, 65% to 80% of the tritium label is recovered as tritiated water. However, in AME affected individuals very little (≤ 4%) tritiated water is found in plasma, indicating no significant oxidation of the 11β-hydroxyl group.[11] This finding supports a lack of 11-βOHSD activity.

Treatment.—The aim of treatment of AME is to reverse life-threatening hypokalemia and restore normal blood pressure. Potassium-sparing diuretics have typically been used (Table 1). Spironolactone, an aldosterone receptor antagonist, causes a natriuresis (thus treating the volume-related hypertension) and potassium retention (correcting the hypokalemia).[1,4] However, high doses (200-400 mg/



***In AME, there is a deficiency of 11β-OHSD. Licorice inhibits 11β-OHSD activity. Both conditions favor the reaction going to the left (bold arrow) and cause a relative increase in cortisol metabolites (THF, 5αTHF) as compared with cortisone metabolites (THE, cortolones).**

Figure 2.—Overview of cortisol metabolism.

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day) are often required and undesirable side effects such as nausea and painful gynecomastia may limit its use. Amiloride (up to 30 mg/day), which blocks the apical membrane sodium channel in the cortical collecting tubule and inhibits potassium secretion, is an alternative agent. Triamterene, another potassium-sparing diuretic which acts at the distal tubule, has also been used either alone or in combination with other therapy. A low sodium diet appears to be beneficial in treating the hypertension.[4]

Dexamethasone suppresses endogenous cortisol production through a negative feedback mechanism at the level of the hypothalamus/pituitary axis. As a result of this negative feedback, less cortisol is available to bind to the mineralocorticoid receptor in the kidney and the syndrome is ameliorated. It is important to note that dexamethasone itself does not appreciably activate the mineralocorticoid receptor. Acute administration of this steroid promotes natriuresis, potassium retention, and normalizes blood pressure in some,[3] but not all cases of AME.[4] In general, normotension is rarely achieved with dexamethasone therapy alone and additional antihypertensive agents are usually required.

Licorice-induced Hypermineralocorticoidism

Licorice extract from the root of *Glycyrrhiza glabra* is a sweet substance formerly used in confections, and has long been used in Chinese medicines. However, this substance is also associated with adverse effects on salt and water metabolism. In 1946 Revers noted hypertension and peripheral edema in 20% of patients ingesting a licorice preparation for treatment of peptic ulcer.[12] In addition, certain laxatives and chewing tobaccos, which also contain large amounts of licorice, were observed to promote hypokalemia and hypertension.[13] Carbenoxolone, another peptic ulcer remedy, is also a derivative of glycyrrhetinic acid (see below) and has metabolic effects similar to licorice. Gossypol, a Chinese cottonwood derivative that inhibits spermatogenesis in men, has also been found to cause volume expansion and hypokalemia through its licorice-like effects.[1]

Glycyrrhizic acid and its hydrolytic product glycyrrhetinic acid are the active components of licorice. Ingestion of as little as 600 mg/day (equivalent to 200 mg/day of confectionery licorice) results in a clinical picture of mineralocorticoid excess. Previously it was believed that

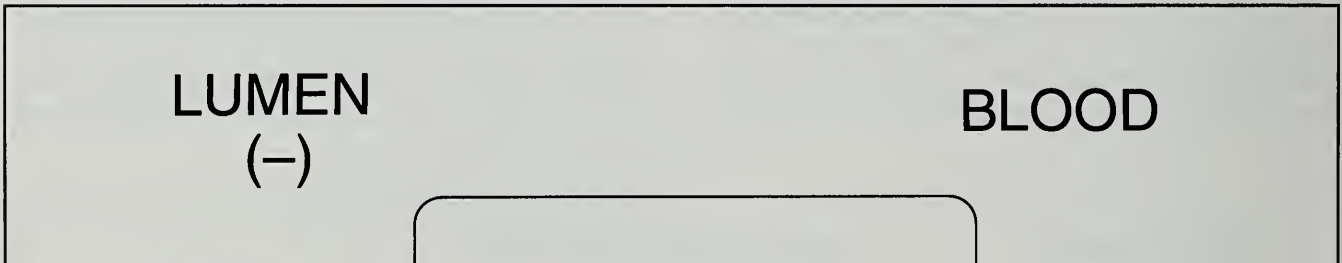

Figure 3.—Schematic representation of a principal cell, showing the major sodium (Na^+) and potassium (K^+) transport mechanisms. In Liddle's syndrome, there is constitutive activation of the amiloride-sensitive Na^+ channel (arrow). Sodium entry through the apical membrane Na^+ channel promotes the development of a electrochemical gradient favoring secretion of K^+ from the intracellular to the tubular lumen.

Table1.—Unusual syndromes of true or apparent mineralocortcoid excess

Clinical Features	**AME**	**LICORICE**	**LIDDLE'S SYN**	**GRA**
Hypertension	+	+	+	+
Serum K	↓	↓	↓ / N	↓/ N*
Serum HCO_3	↑	↑	↑	↑
PRA	↓	↓	↓	↓
Serum aldosterone	↓	↓	↓	↑ /N
Serum cortisol	N	N	N	N
Urine steroid profile	↑ ratio[†] of THF+5αTHF/THE	↑ ratio[†] of THF+5αTHF/THE	↓ aldosterone	↑ 18-oxocortisol and 18-OH cortisol
Suppression with dexamethasone[§]	Yes	Yes	No	Yes
Defect	11β-OHSD deficiency[†]	Inhibition of 11β-OHSD	Mutation in gene for β subunit of epithelial Na channel	Chimaeric gene on chromosome 8
Treatment	Spironolactone Amiloride Triamterene Na restriction Glucocorticoids Anti-HTN meds	Licorice withdrawal	Amiloride Triamterene Na restriction Anti-HTN meds	Spironolactone Amiloride Triamterene Na restriction Glucocorticoids CCB (?)

K = potassium; HCO_3 = bicarbonate; N = normal; PRA = plasma renin activity; THF = tetrahydrocortisol; THE = tetrahydrocortisone; 11ß-OHSD = 11ß-hydroxysteroid dehydrogenase; Na = sodium; HTN = hypertension; CCB = calcium channel blocker

*May develop severe hypokalemia on thiazide diuretics

[†] Does not apply to Type 2 variant (see text)

[§] Administration of dexamethasone inhibits manifestations of mineralocorticoid excess

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the sodium retention associated with licorice ingestion was due to a direct binding of these substances on the type I mineralocorticoid receptor. However, this effect was not observed to occur in subjects with Addison's disease or those with bilateral adrenalectomy who ingested licorice. This suggested that the adrenal gland and appropriate steroid production must be present for licorice to promote a state of mineralocorticoid excess.[14] The simultaneous administration of glycyrrhizic acid and cortisone in Addisonian patients has been shown to restore the mineralocorticoid effect of licorice.[15] Furthermore, the affinity of glycyrrhetinic acid for the type I receptor was demonstrated to be far below that of aldosterone.[16] Taken together, these data suggest that a direct action of licorice on the mineralocorticoid receptor in the kidney is not the mechanism by which the hypokalemia, sodium retention and hypertension occur.

A striking similarity in the clinical presentation and metabolic profile (see below) of licorice ingestion and AME lead to speculations that the same enzyme (11-βOHSD) was inhibited in both disorders. Dexamethasone administration also suppressed the mineralocorticoid action of glycyrrhetinic acid, and thus confirmed the role of cortisol in this disorder.[17] As in AME, patients who ingested licorice also responded to treatment with spironolactone.[18]

Pathogenesis.—The metabolism of [11α-^{3}H]-cortisol was subsequently studied in normal volunteers given licorice.[19] There was an increase in the plasma half-life of [11α-^{3}H]-cortisol which indicated the inhibition of 11-βOHSD (Fig. 2). Animal studies confirmed the inhibition of 11-βOHSD by glycyrrhizic acid.[20] Therefore, with licorice ingestion, there is impaired conversion of cortisol to cortisone because of decreased 11-βOHSD activity. This is apparently due to both competitive inhibition of 11-βOHSD activity and reduced gene expression.[21] Cortisol is then permitted to act as a potent mineralocorticoid at the type I receptor.

Clinical and Laboratory Features.—Patients often demonstrate the classic features of exogenous mineralocorticoid excess (Table 1): hypokalemia, hypertension, renal potassium wasting, metabolic alkalosis, and sodium retention.[1] A history of licorice ingestion is often obtained. In addition, ingestion of licorice-containing substances (such as laxatives and chewing tobacco), or licorice-like compounds (carbenoxolone, gossypol) may also have occurred. The presenting symptoms may include a myopathy or cardiac arrhythmia from severe hypokalemia.[13,22]

The pattern of urinary steroid excretion in licorice ingestion is similar to that of congenital AME. These include an elevated urinary free cortisol level and an increased urinary THF + 5αTHF/THE ratio. The ratio is typically higher in chronic licorice ingestion than in acute ingestion, but both are less than the ratio found with the congenital syndrome.[23,24] Cortisol levels are also normal, while PRA and aldosterone levels are suppressed.

Treatment.—The hypertension and hypokalemia respond to discontinuation of the licorice or other offending substance. When licorice ingestion is discontinued, the urinary THF + 5αTHF/THE ratio returns to normal concurrently with the decrease in urinary excretion of glycyrrhetinic acid. In chronic licorice ingestion, electrolyte balance is restored after two weeks of licorice withdrawal.[23] PRA and aldosterone levels return to normal after two to four months.[23,25]

Liddle's Syndrome

Liddle's syndrome is a rare autosomal dominant condition in which there is a primary increase in collecting tubule sodium reabsorption and potassium secretion. Affected individuals have hypertension, chloride-unresponsive metabolic alkalosis, and renal potassium wasting, resembling a state of mineralocorticoid excess. Variation in the severity and onset of hypertension implies variable penetrance of the gene involved.[26] To date about 50 cases have been identified worldwide,[27] although the disorder may be underdiagnosed.

In 1963 Liddle described a disorder that simulated primary hyperaldosteronism, characterized by severe hypertension and hypokalemia, but with negligible secretion of aldosterone.[28] Because of the latter findings, the term "pseudoaldosteronism" has been used to describe this syndrome. The administration of triamterene during salt restriction decreased urinary potassium excretion, increased urinary sodium excretion, and corrected the hypertension and hypokalemia. In contrast, therapy with spironolactone produced no response. This argued against the hypothesis that an unidentified mineralocorticoid was the cause of the syndrome.

Subsequently, Botero-Velez et al reported amelioration of the syndrome in this index patient with successful renal transplantation. The patient remained normokalemic, and the response of the renin-aldosterone axis to salt restriction was normal.[26] This suggested the presence of a specific transport defect in the distal nephron segment that regulates sodium and potassium excretion.

Pathogenesis.—The constellation of findings in Liddle's syndrome suggests constitutive activation of the amiloride-sensitive distal renal epithelial sodium channel (Fig. 3). Inappropriate sustained reabsorption of sodium by the cortical collecting tubule promotes volume expansion and hypertension. Concomitant potassium wasting occurs as a result of sodium delivery to the distal nephron segment and the secretion of potassium via the parallel conductance pathway in the apical membrane.

The epithelial sodium channel is a multimer that includes at least three subunits of homologous structure: the α subunit which supports low levels of amiloride sensitive sodium conductance when expressed alone in *Xenopus* oocytes;[29] the β and γ subunits which support only extremely low sodium conductance when expressed alone, but which greatly augment sodium conductance when expressed in conjunction with the α subunit.[30] The β subunit plays a unique role in the normal regulation of epithelial sodium channel activity. In Liddle's syndrome, mutations in the gene encoding the β subunit have been identified.[31] Expression of these abnormal genes in the *Xenopus* oocyte is associated with a marked increase in sodium transport.[32] In at least some cases, the defect prevents internalization of the sodium channels which leads to an increased number of channels available for sodium reabsorption and subsequent urinary potassium wasting.[33]

In addition to the renal tubular transport defect, patients with Liddle's syndrome have an enhanced influx of sodium into erythrocytes[34] and B lymphocytes.[35] Using patch clamp techniques, a highly-selective amiloride sensitive sodium channel was identified. The marked cellular influx of sodium was coupled with potassium efflux from the cell. However, this sodium channel abnormality does not affect all body cells, since the membrane transport of sodium in cells of the salivary and sweat glands are normal.

Clinical and Laboratory Features.—Hypertension usually manifests itself during the adolescent years, although a few cases have been reported at a younger age.[26] Blood pressure may be difficult to control and may require multiple agents. Premature death, due to stroke or heart failure, may be another prominent feature as described in the original pedigree.

Metabolic alkalosis is commonly noted on routine serum chemistry determinations. Although the presence of hypokalemia was emphasized in the original report, it is not a universal finding. In fact, affected individuals may have a normal potassium concentration when evaluated for hypertension.[27] Hypokalemia is therefore an insensitive screening test for actual or apparent mineralocorticoid excess. Marked renal potassium wasting, even in the presence of profound hypokalemia, occurs in Liddle's patients. The renin-angiotensin system is suppressed because of chronic extracellular volume expansion and the serum cortisol level is normal.[28] A low rate of urinary aldosterone secretion is also present (Table 1). Urinary levels of corticosteroid metabolites are typically normal. Renal biopsy demonstrates atrophy of the juxtaglomerular apparatus and loss of renin-secreting granules.[36] Improvement of hypertension and hypokalemia occurs with triamterene and amiloride, but not with spironolactone. This finding helps differentiate Liddle's syndrome from other causes of excess mineralocorticoid activity.

Treatment.—Amiloride and triamterene are effective therapy for hypertension and hypokalemia, as long as dietary sodium intake is restricted.[26,27] These two agents act by blocking the renal epithelial sodium channels in the cortical collecting tubule. Spironolactone is ineffective since the constitutive increase in sodium channel activity is not mediated by aldosterone. In the outpatient setting, when rigid dietary salt restriction cannot be maintained, therapy with more potent vasodilators is usually required to control hypertension.

Glucocorticoid-remediable Aldosteronism (GRA)

Glucocorticoid-remediable aldosteronism is a rare familial form of adrenal gland hyperplasia in which the hypersecretion of aldosterone can be reversed with glucocorticoid therapy.[37] First reported by Sutherland in 1966,[38] this entity is also sometimes referred to as "glucocorticoid-suppressible hyperaldosteronism" (GSH). It is inherited as an autosomal dominant trait that follows classical Mendelian genetics. Unlike primary aldosteronism, GRA appears to affect both sexes equally.[39] It is the least common of the true mineralocorticoid-excess states, with a prevalence far below that of aldosterone-producing adenoma and bilateral adrenal cortical hyperplasia. Fewer than 100 cases have been reported worldwide,[37] but some authors feel that it maybe underdiagnosed.[39]

Pathogenesis.—Under normal conditions, aldosterone is synthesized in the zona glomerulosa of the adrenal gland. Its production is catalyzed by the enzyme aldosterone synthase, and is regulated primarily by the renin-angiotensin system and potassium balance. On the other hand, cortisol is produced in the zona fasciculata through the action of 11β-hydroxylase, and its synthesis is regulated by ACTH. A chimaeric gene duplication has been identified in GRA that results from unequal crossing between the 11β-hydroxylase gene and the aldosterone synthase gene, both of which are located in close proximity on chromosome 8.[40] This chimaeric gene contains the 5' ACTH regulatory protein of the 11β-hydroxylase gene and the 3' coding sequence of the aldosterone synthase gene. Therefore, ectopic aldosterone production occurs in the zona fasciculata through abnormal regulation by ACTH. Since ACTH does not respond to the same signals that influence renin secretion, dysregulated aldosterone production results in a mineralocorticoid excess state.

Clinical and Laboratory Features.—As in most conditions of excessive mineralocorticoid activity, patients often present with hypertension and a hypokalemic metabolic alkalosis. Hypertension may be evident from birth onwards and is often diagnosed in the teenage years. The youngest patient ever diagnosed with GRA was three months old at the time of diagnosis.[37] Blood pressure is often difficult to control, however, the range of blood pressure in kindred affected with GRA is variable and may be related to differences in other hereditary factors regulating blood pressure. Muscle weakness, fatigue, and paresthesias may result from hypokalemia. Hypokalemia-induced nephrogenic diabetes insipidus causes polyuria and polydipsia. Chronic hypokalemia mayn also impair insulin secretion and precipitate glucose intolerance or overt diabetes mellitus. Family history may be remarkable for early hypertension and an increased frequency of cerebrovascular events.[39]

Serum potassium levels may be low or normal (Table 1).[37] These patients are especially at risk for hypokalemia when given potassium-wasting diuretics, such as hydrochlorothiazide. These agents increase sodium delivery to the aldosterone-sensitive potassium secretory site in the collecting tubule, and promote electrogenic potassium secretion. On many occasions, these patients are recognized when they develop hypokalemia in the setting of therapy with thiazide diuretics as treatment for hypertension. The serum bicarbonate level is often elevated as expected in a state of mineralocorticoid excess.

Historically, suppression of the mineralocorticoid excess state with a seven- to 10-day course of dexamethasone is considered highly suggestive of GRA. However, this cumbersome test may not differentiate GRA from other conditions, such as AME, and is therefore no longer utilized.

Aldosterone levels are modestly elevated, or may be normal.[37] PRA is usually low unless aldosterone antagonists have been administered prior to testing. However, these findings are nonspecific. In addition to aldosterone, production of other 18-oxygenated steroids, including 18-oxocortisol and 18-(OH)-cortisol, occurs with GRA. These steroids are found in concentrations of 20 to 30 times normal in the urine of affected individuals, and can be used to establish the diagnosis of GRA. Unfortunately, measurement of these urinary oxygenated steroids is cumbersome and limited to only a few research laboratories. These assays have been replaced by a genetic test which uses Southern blot techniques to detect the chimaeric gene. This diagnostic tool has been found to be a highly sensitive and specific test to diagnose GRA.[40]

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Treatment.—Since aldosterone production is under the regulation of ACTH, exogenous glucocorticoids have been used to reverse the syndrome through suppression of ACTH (Table 1). Traditionally, dexamethasone, at doses of 0.5-2 mg/day, successfully controls GRA by suppression of ACTH secretion. Because of the potential toxicity of steroid therapy, the lowest effective dose of a shorter-acting agent (hydrocortisone or prednisone) should be used.[39] Long-term steroid therapy generally leads to restoration of aldosterone response to upright posture, salt restriction, and exogenous angiotensin.[41] However, it is important to note that suppression of the hypothalamic-pituitary-adrenal axis does not always result in normalization of blood pressure in GRA.[39]

Potassium-sparing diuretics have been effective in treating the hypertension of GRA. Spironolactone, an aldosterone antagonist, is the agent of first choice. Doses of 200 to 400 mg/day are usually required, but side-effects may again limit its use. Amiloride and triamterene are alternative agents, and usually restore potassium levels to normal. However, they are usually not sufficient as single agents to control blood pressure. Dietary sodium restriction is recommended to limit potassium wasting and ameliorate hypertension.

The dihydropyridine calcium channel blockers have been shown to inhibit aldosterone synthesis in vitro,[42] making them second line anti-hypertensive agents in GRA. When used as a single agent, blood pressure response has been likewise disappointing.

Summary

The association of hypertension and hypokalemia should lead one to suspect a state of true or apparent mineralocorticoid excess. Hypokalemia may be either spontaneous, or become manifest after treatment with potassium-wasting diuretics. Hypertension is usually early in onset and may be refractory to usual medical management. A careful history, especially with respect to a family history of hypertension and its complications (cerebrovascular events, cardiovascular disease) should be taken. In the appropriate setting, an evaluation for a high renin state or primary hyperaldosteronism should be undertaken. Exclusion of these conditions, coupled with a strong family history of hypertension, should raise the possibility of the less common familial hypertensive syndromes, such as AME, Liddle's syndrome, and GRA. Careful inquiry into dietary and tobacco habits, or use of herbal medications can uncover hypertension related to licorice-like substances, which is easily corrected with discontinuation of offending agents. Diagnostic tools include urine steroid profiles, response to glucocorticoids, and potassium-sparing diuretics, and genetic testing (for GRA). Appropriate therapy improves blood pressure control and corrects hypokalemia.

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Hernia of the Lung:
A Case Report and Review of Literature

OMAR A. MINAI, M.D., GRAEME HAMMOND, M.D., AND ANNE CURTIS, M.D.

ABSTRACT—Lung hernia is a protrusion of pulmonary tissue through an abnormal defect in the wall of the thoracic cavity. Though the hernias may be congenital, they are usually acquired following a penetrating injury and surgical intervention. Symptoms are usually vague and infrequent. Pain and discomfort may be present at the site of a chest swelling that increases with forced expiration and valsalva and is readily reducible. Diagnosis may be confirmed radiologically by an oblique chest roentgenogram or a computed tomographic scan. Lung hernias only occasionally require surgical repair. We report the case of a 38-year-old man with acquired lung hernia, through a thoracotomy scar, and presenting as chest pain. A review of the literature is presented.

Introduction

HERNIA of the lung may be defined as " a protrusion of pulmonary tissue accompanied by visceral and parietal pleura through an abnormal defect in the wall of the normal thoracic cavity under the skin." The phrase 'under the skin' is used to avoid confusion with traumatic evisceration. Prolapse of the lung through a ruptured parietal pleura is different in that it lacks a hernial sac.

Lung hernias are rarely encountered. Roland is credited with describing the first case in 1499.[1] Later observations were made by Hildanus in 1606 and Loyseau in 1617. Although sporadic cases had been reported, Morel-Lavallee was the first to make a thorough study in 1845, and reported a series of 32 cases with a classification based on etiology and location, which is still largely accepted.[2,12] Montgomery and Lutz collected 165 cases up to 1925.[2] In 1954, Hiscoe and Digman reported 68 cases.[3] Bidstrup et al in 1956 reported 23 cases,[4] and finally, Munnell added two cases to bring the total to 258.[5] Since then, 15 further cases have been reported in the literature and are collected here. These, along with our one case report, brings the total of reported cases to 274 (some of which could not be classified according to etiology or location).

Case Report

The patient was a 38-year-old employee at Yale University in the Facilities Management Department who underwent a magnetic resonance imaging examination in the fall of 1992, because of intractable pain in the right shoulder and hand, which revealed a mass in the upper lobe of the right lung. A lung biopsy via thoracotomy in October 1992 was consistent with sarcoidosis. The patient recovered and returned to his work which required heavy lifting. He subsequently developed a sharp pain in the upper chest on the right side upon coughing, performing Valsalva maneuver, or straining during bowel movement, and which was relieved with rest. On examination, he appeared well, was overweight, and in no distress. There was a bulge in the right pectoral region just below the medial part of the clavicle along the upper right sternal border, which appeared on coughing and during a Valsalva maneuver. The bulge was mildly tender and reduced spontaneously at rest. Air entry was good bilaterally. No clubbing, cyanosis, or edema were noted. A chest film revealed a wide mediastinum and a right perihilar lucency. A computed tomagraphic scan of the chest in July 1993

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Table 1—Classification by location.

Author	Cervical	Thoracic	Diaphragm.
Montgomery and Lutz[2]	16	62	00
Hiscoe and Digman[3]	17	39	00
Bidstrup et al[4]	22	03	00
Beale[15]	00	00	01
Munnell[5]	01	01	00
Kyosola et al[7]	00	01	00
Loeff et al[16]	00	01	00
Sheka et al[17]	00	01	00
Salter and Hopton[18]	00	01	00
Seibel et al[10]	00	01	00
Forty and Wells[14]	00	01	00
Sebba and Baigelman[19]	00	01	00
Bhalla et al[9]	02	03	00
Meek et al[20]	00	01	00
Fisch et al[21]	00	02	00
Donato et al[6]	00	01	00
Present report	00	01	00
Total	**58**	**120**	**01**
Percentage	**32.40**	**67.03**	**00.55**

showed herniation of a part of the upper lobe of the right lung through the thoracotomy defect in the anterior chest wall. The 6 x 3 cm defect was repaired with Bovine pericardium and Gore-Tex patch. There were no local complications. The patient was discharged home on the sixth postoperative day after the clips were removed. He was advised to avoid heavy lifting, and was seen in follow-up in September 1993; he continued to complain of occasional discomfort over the right chest although no bulge was apparent with coughing or Valsalva maneuver. A chest film at this time revealed a reversal of the air pocket which represented the hernia.

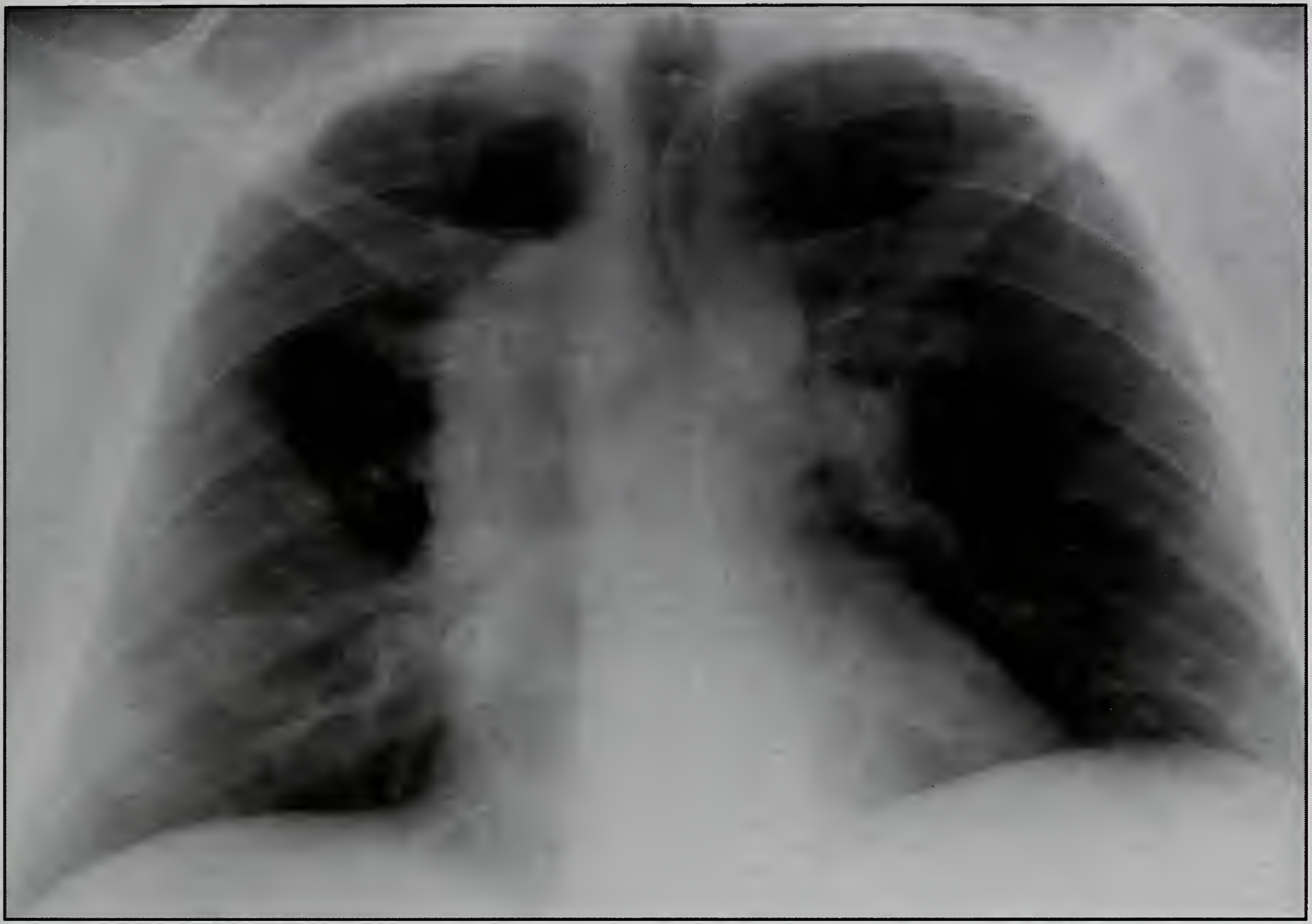
Discussion

According to Morel-Lavallee, lung hernias may be classified according to location into thoracic, cervical, and diaphragmatic, and according to etiology into congenital and acquired, the latter being further subdivided into traumatic, consecutive, spontaneous, and pathological. Table 1 and 2 list all cases thus far reported according to etiology and location.

Congenital hernias occur in the superior thoracic aperture from attenuation or absence of the Sibson's fascia. Herniations project into the neck between the scalene and the sternomastoid muscles. These herniations may also occur following defects in the ribs and sternum, which are covered by fibrous bands.

Acquired hernias are more common than congenital ones. The great majority of these are traumatic. *Spontaneous* lung hernias occur in the presence of a local impairment of the thoracic wall along with increased intrathoracic pressure as by coughing or lifting weights. Wightman reported the occurence of a spontaneous hernia in a flute blower.[2] These hernias may occur in such areas of anatomical weakness as the superior aperture of the thoracic cage and in the intercostal spaces in the anterior chest wall medial to the costochondral junctions. Donato et al report a case following forceful clockwise rotation of the chest,[6] a maneuver that may dislocate the eighth costovertebral junction with further separation of the seventh and eighth ribs, thereby disrupting the intercostal muscles by widening the interspace. These hernias have also been described following rupture of intercostal muscles ascribed to aging and excessive exertion. *Traumatic* hernias occur with rib fractures, penetrating injuries, and surgical intervention. Protrusions occuring late after injury have been classified as "consecutive" by Morel-Lavallee, this term signifing only a longer time, and is best avoided since it is confusing. As it is, traumatic hernias are rarely if ever apparent immediately after injury, and usually appear later following wound healing. It should be noted that lung hernia is by no means a common complication of thoracic surgery. Blunt thoracic trauma may also be associated with the development of lung hernia if rib fracture occurs. Kyosola et al reported a case occurring during ventilator treatment for flail chest following blunt thoracic trauma, and corrected surgically with good result.[7] They point out that positive pressure ventilation in such patients may increase the risk of this complication. *Pathological* hernias follow abscess of the chest wall or breast, malignant tumors, empyema necessitatis, and tuberculous osteitis because of weakening of the thoracic wall by the pathological process.

Location.—Hernias in the cervical region account for approximately one-third of the cases, while two-thirds occur in the anterior thorax. Anatomically, there is good reason for this because anteriorly, from the costochondral junction to the sternum, the external intercostal muscles are absent and this area is protected only by the pectoralis major muscle. The internal intercostal muscles are absent posteriorly from the costal angle to the vertebrae. This area is provided much better support by the latissimus dorsi, trapezius, and rhomboids. This structural weakness, together with greater distance between ribs anteriorly, may contribute. Cervical hernias usually occur through the apex of the thorax, between the sternomastoid and the anterior scalenii. In 1938, Korol called attention to the fact



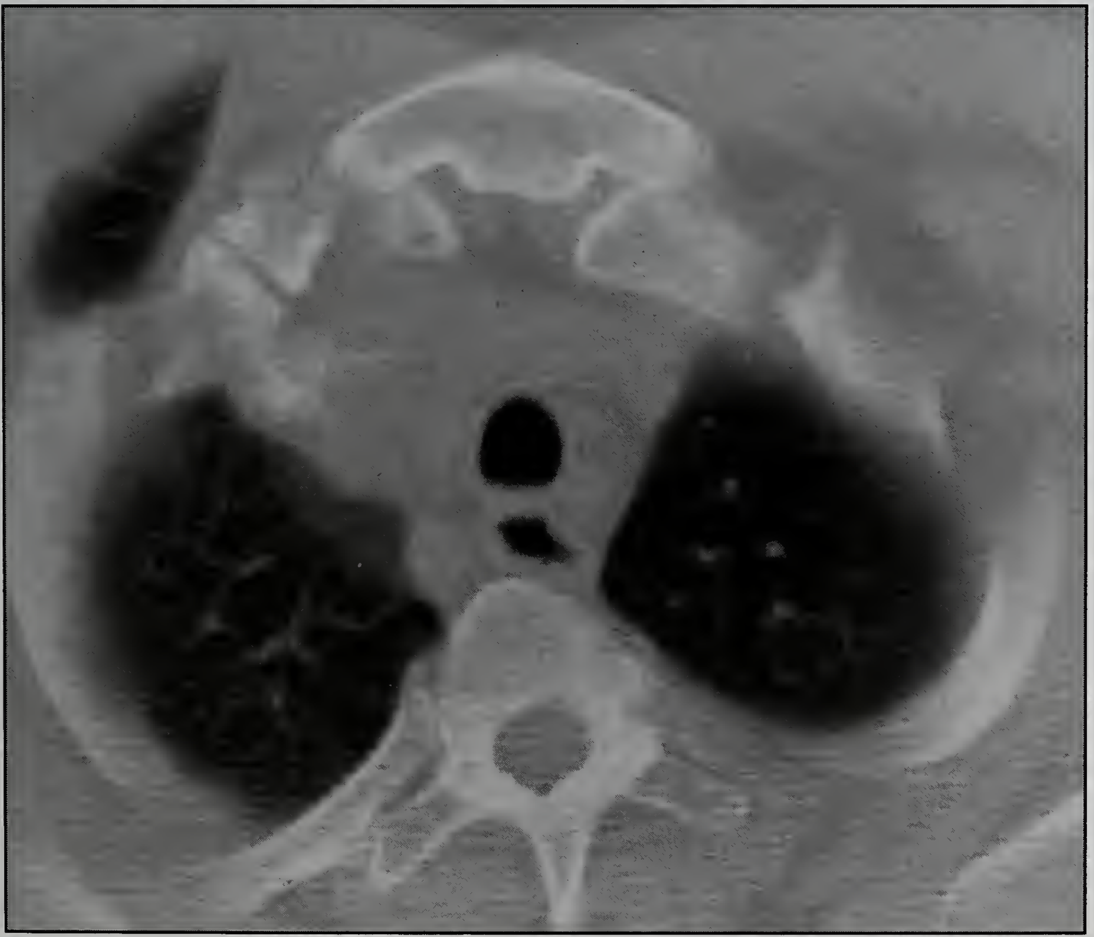


Figure 1.(above)—Chest x-ray showing lung hernia just above right hilar area.

Figure 2.(left)—CT Scan of chest showing herniation of the right lung through the chest wall, under the skin.

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that mediastinal lung hernia, ie, the protrusion of one lung across the midline through weak spots in the mediastinal septum after pneumonectomy or lobectomy, should be included in the classification of lung hernias.[8] He also pointed out that diaphragmatic lung hernia is unlikely because of the pressure relationships involved.

Diagnosis.—Recognizing lung hernia is not difficult since there is often a history of injury or surgery with scarring or deformity of the chest wall. Pain and discomfort, if present, are at the site of a chest wall swelling that increases in size with forced expiration, and decreases or disappears with inspiration. A rent or orifice may be palpable at the site. Reduction of the mass is possible by applying firm digital pressure.The mass is usually ovoid, and may feel soft, spongy, and crepitant. The mass reaches its maximum size during a Valsalva maneuver. On auscultation, vesicular whistling and crackling rales may or may not be heard. The diagnosis can be confirmed radiologically. Herniations into the neck may be visualized on either chest radiographs or lateral radiographs of the neck. Herniation through the intercostal space may be missed on routine chest films unless the hernia is at a tangent to the x-ray beam. The best view in this case is an oblique one. Computerized tomographic scans not only help to detect the hernia, but also helps in determining the location and size of the defect.[9] It may also reveal associated abnormalities in the lung or chest wall. Seibel et al have reported a case detected on screening xeromammography and corraborated with computerized tomographic scan.[10] They point out that the contrast of the herniated lung against the chest wall or breast tissue makes mammography an excellent means for confirming the diagnosis in suspected cases of anterior or anterolateral lung herniation.

Differential diagnosis.—Other conditions to be considered are neoplasms, such as lipoma or angioma, traumatic subcutaneous emphysema, and rarely, pleural empyema, gas bacillus infection, and cold abscess.

Table 2.—Classification by Etiology

Author	**Congenital**	**Acquired**		
		Traumatic	**Spont.**	**Pathological**
Montgomery and Lutz[2]	29	83	53	00
Hiscoe and Digman[3]	11	32	11	02
Beale[15]	00	00	00	01
Munnell[5]	01	01	00	00
Kyosola et al[7]	00	01	00	00
Loeff et al[16]	01	00	00	00
Sheka et al[17]	00	00	01	00
Salter and Hopton[18]	00	01	00	00
Seibel et al[10]	00	01	00	00
Forty and Wells[14]	00	01	00	00
Sebba and Baigelman[19]	00	01	00	00
Bhalla et al[9]	02	03	00	00
Meek et al[20]	00	01	00	00
Fisch et al[21]	00	02	00	00
Donato et al[6]	00	00	01	00
Present report	00	01	00	00
Total	**44**	**128**	**66**	**03**
Percentage	**18.25**	**53.11**	**27.38**	**01.24**

Lung hernias rarely disappear without intervention but often do not pose a threat unless they undergo incarceration or strangulation with resultant hemoptysis as ell as pain at the site of herniation. Small asymptomatic lung hernias require no treatment other than reassurance emphasising the benign nature of the condition. When treatment is required, it may be either palliative, with some form of truss that keeps the hernia in place, or surgical with closure of the chest wall defect. Many methods of surgical repair have been used. In 1891 Tuffner freed and ligated a hernial sac with cure.[5] Vogler in 1898 suggested a periosteal or bone flap from the sternum. In 1922 Graham packed the sack of a cervical hernia with iodoform gauze and obtained permanent cure.[11] Goodman in 1933 covered the defect with periosteal flaps from ribs after excising the hernial sac.[12] Winkel in 1935 used fascia lata to repair the chest wall defect.[13] More recently Forty and Wells described the use of a Gore-Tex patch for repair.[14] Since traumatic intercostal hernias are usually asymptomatic and uncomplicated, it is reasonable to allow time for spontaneous resolution, contemplating surgical intervention only if this does not occur.

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A Thirty-eight Year Comparison of Cancer Incidence and Mortality Among Employees at a Connecticut Chemical Plant

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JANICE B. CARTMILL, B.S., AND KENNETH M. BODNER, M.S.P.H.

ABSTRACT—An important aspect of occupational mortality is the fact that death registration is complete and has good specificity and sensitivity for those cancers with poor survival. However, if available and complete, cancer incidence data are preferable. A unique opportunity presented itself at The Dow Chemical Company's Allyn's Point plant (Gales Ferry, Connecticut) to conduct a cancer incidence and mortality study since the plant began operation in 1951, several years after the establishment of the Connecticut Tumor Registry. All male employees (N = 666) with one or more years of service from 1951-1989 were eligible for the study. Altogether there were 47 primary incident cancers which represented 40 individuals. The Standardized Incidence Ratio (SIR) for all cancer was 124 (95% confidence interval [CI] 91-165). There were 23 deaths reported for all cancers (Standardized Mortality Ratio [SMR] 87, 95% CI 55-131). Only laryngeal cancer incidence was statistically significant (Standardized Incidence Ratio [SIR] 417, 95% CI 135-972). After review of the work history records, this association was found to be inconsistent with a common exposure hazard at the plant.

Abbreviations Used in Text
SIR = standardized incidence ratio
CI = confidence interval
SMR = standardized mortality ratio

Introduction

AN important aspect of occupational retrospective cohort mortality studies conducted in the United States is the fact that death registration is complete and has good specificity and sensitivity for those cancers with poor survival (eg, lung, stomach, pancreas).[1-3] The Dow Chemical Company's epidemiology department has routinely conducted mortality surveillance of its workforce.[4-9] However, if available and complete, cancer incidence data are preferable to mortality data for several reasons. First, a number of studies have reported the inaccuracy of underlying and contributing cause-of-death information on death certificates.[1-3] Second, studies of cancer incidence will have fewer problems with disease misclassification because most incident cases are histologically confirmed. Third, many types of cancer do not have high case-fatality rates and thus cancer mortality data will underestimate incidence and consequently will result in low statistical power. Finally, the use of cancer incidence data eliminates the potential bias if case-fatality rates differ between the studied and comparison populations.

The Dow Chemical Company has conducted, in collaboration with two population-based tumor registries, cancer incidence studies of its employees in California and Michigan.[10,11] This research has demonstrated the feasibility of linking employer records to a population-based tumor registry to survey cancer incidence among industrial workers. Unfortunately, neither population-

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based tumor registry had been in existence for a lengthy time period, unlike the manufacturing sites studied, and consequently the cancer incidence experience of these operations since the 1940s could not be adequately compared with the known cancer mortality data.

A unique opportunity presented itself at the Dow Chemical Company's Allyn's Point plant, located in Gales Ferry, Connecticut, because it began operation in 1951, several years after the establishment of the Connecticut Tumor Registry. Upon creation of the study cohort for the mortality study, it became feasible to conduct a collaborative study with the Connecticut Tumor Registry to examine cancer incidence at this plant since its inception. Therefore, the purpose of this study was to examine the cancer incidence of male employees at the Allyn's Point plant who had worked at least one year from 1951 through 1989 and compare it to the mortality experience for the same time period. We are unaware of any occupational cohort from the chemical industry that has been studied for such an extended period of time for cancer incidence in the United States using tumor registry data.

Methods

History of the Allyn's Point Plant.—Construction for the Allyn's Point plant began in 1950 with production commencing in 1951-1952. The plant has produced polystyrene resins, polystyrene foam, styrene-butadiene latex, and ABS (acrylonitrile-butadiene-styrene) resins.

History of the Connecticut Tumor Registry.—The Connecticut Tumor Registry, located in the Connecticut State Department of Health, is the oldest population-based cancer registry in the United States.[12] Since 1935, all malignant tumors with the exception of nonmelanotic skin cancer, have been reported to the registry if diagnosed in a resident of Connecticut. Reporting of all newly diagnosed cancer cases became mandatory in 1971. Cancer surveillance coverage includes all hospitals located in Connecticut, including two Veterans Administration hospitals. Cancer surveillance coverage also includes cooperative agreements with selected out-of-state institutions and neighboring states that have statewide tumor registries.

Cohort Definition.—All male employees with one or more years of service between 1 January1951 and 31 December 1989 at the Allyn's Point plant were eligible for the study. This cohort was previously established through 1986 via a general mortality study of this location.[13] The cohort was updated by an additional three years through the use of the company's personnel records. Altogether 666 male employees were considered eligible for the study. Female employees were not considered due to small numbers (< 75).

Cancer Incidence Follow-up.—It was not feasible to obtain a complete residential history for all present and former Dow male employees with one or more years of service at the Allyn's Point plant. For active employees, employees who transferred from Allyn's Point to other Dow locations, and for former employees who were eligible for pension benefits, the Connecticut residential status was usually known by the company. When in doubt, the last known date of Connecticut residence was used as the end date of follow-up. For those employees who quit the company from the Allyn's Point location, the Connecticut residential status was known only through the last date of employment. Determination of their post-Dow residential status was traced through the Connecticut Motor Vehicle Department. If it was determined that a former employee's driver's license was not renewed at the scheduled interval, then the employee's last date of Connecticut residence in the study was assumed to be the last renewal date of his driver's license. Otherwise, if his driver's license was current, then his Connecticut residence was considered to be the end of the study follow-up period (31 December 1989) unless he was known to have died. Matching of the cohort (N = 666) against the records of the Connecticut Tumor Registry was performed using name, birth date, Social Security number, and sex. The record linkage process was repeated to ensure accuracy. No differences were noted between the two linkages.

The expected cancer incidence was computed using a modified life-table approach[14] from the person-years at risk contributed by eligible employees and age (five-year categories), race (white), sex (male), and calendar-year and site-specific cancer incidence rates for the state of Connecticut. Eligible employees began follow-up after one year of employment at the Allyn's Point plant. Person-years at risk were accumulated until the earliest occurrence of one of the following: 1) the person was known to have moved from Connecticut; 2) the person was lost to follow-up as to his status as a Connecticut resident; 3) the person died as a Connecticut resident; or 4) 31 December 1989. Standardized incidence ratios (SIRs) were calculated as the ratio of observed to expected cancer events multiplied by 100. Statistical significance was evaluated by computing 95% CIs about the SIRs.[15] An SIR was considered statistically significant when the null value (SIR = 100) was not included in the 95% CI. In a separate analysis, follow-up was ignored for the first 15 years in order to examine for an induction-latency period.

In addition to analyzing the experience of all male employees combined, separate analyses were done by subgroups defined by the first job, last job, or longest-held job. A dichotomous job classification was used: administration (ie, managers, professionals, and clerical); and operations (ie, operators, craftworkers, and laborers).

In summary, the first employees began work at the Allyn's Point plant in 1951. The one-year employment eligibility for this study meant that observed and expected cancer incidence ascertainment occurred over a 38-year time period (1952-1989). The 15-year induction-latency period meant that for every employee their first 15 years since their date of hire at the plant were ignored in the analysis. Thus, the latency analysis covered the time period from 1966-1989.

Mortality Follow-up.—Unlike the cancer incidence study, establishment of Connecticut residence status was not necessary for follow-up purposes for the mortality study. Person-years for cohort members were accumulated across five-year age- and calendar-year specific intervals beginning with the date of entry until the earliest occurrence of one of the following: 1) lost to follow-up (independent of Connecticut residence); 2) death; or 3) 31 December 1989. The vital status of male employees with a minimum of one-year employment duration (1951-1989) was observed through 31 December 1989 using company records, the earnings and benefit records of the Social Security Administration,[16] and the records of the National Death Index. Death certificates were coded consistent with the National Center for Health Statistics, according to the International Classification of Disease rules in force at the time of death.[17] The number of expected deaths was derived by multiplying the age-, race-, sex-, and calendar-year-specific person-year estimates and Connecticut mortality rates together and then summing the products across strata. Standardized mortality ratios (SMRs), ratios of observed to expected numbers of deaths (x 100), were calculated for all categories with two or more observed deaths. Statistical significance was evaluated by computing 95% confidence intervals about the SMRs.[15] In a separate analysis, follow-up was ignored for the first 15 years in order to examine for an induction-latency period.

Like the cancer incidence study, the mortality analyses included a dichotomous job classification of administration and operations. Again, this was based on either the first, last, or longest-held job.

A total of 666 male employees was eligible for the cancer incidence study. Thirty-six percent were hired during 1951-1959, 24% from 1960-1969, 29% from 1970-1979, and 11% from 1980-1989. For the cancer incidence component of the study, the cohort contributed 11,086 person-years. The mean number of years of follow-up for cancer incidence was 16.7 years. For the cancer mortality component of the study, the same cohort contributed 14,768 person-years with the mean number of years of follow-up at 22.2 years. Vital status was obtained for all subjects. The reason for the 3,680 fewer person-years for the incidence analysis is due to the loss to follow-up of subjects resulting from residential address changes after their employment in the Allyn's Point plant (see above discussion regarding determination of Connecticut residence).

Results

The table provides the SIRs and SMRs for the entire study period by cancer type. Altogether there were 47 primary cancers reported which represented 40 individuals (ie, seven multiple primaries reported). Thus, cancer incidence cases refers to diagnoses, not necessarily different individuals. Although the SIR for all incident cancers was elevated (SIR = 124), it was not statistically significant (95% CI 91-165). Only the SIR (417) for laryngeal cancer was statistically significant (95% CI 135-972). Whereas the SIR for all cancer incidence was elevated, the SMR for all cancer mortality (which refers to individuals who died from cancer) was nonsignificantly below the null value (SMR = 87, 95% CI 55-131). The SMR for laryngeal cancer was near the null value but it was based on only one death. This death was one of the five incident cancer cases. Another difference between SIRs and SMRs was noted for prostate cancer. The SIR was 98 (95% CI 27-251) whereas the SMR was 290 (95% CI 79-742). Each was based on four observations.

There were 23 employees who died from cancer according to the death certificates (see table). Five of these 23 deaths were not reported as incident cancers. Thus, a total of 45 employees were diagnosed with cancer utilizing both the cancer incidence and mortality databases. Of the five deaths who were not reported as incident cancers, three died from prostate cancer, one from stomach cancer, and one from cancer of the rectum. Four were out-of-state cancer deaths. The fifth individual died in Connecticut but was not known as a cancer incident case within the Connecticut Tumor Registry database. We did not include these five deaths as incident cancer cases because their deaths occurred after their last known Connecticut residential status date which was used to calculate person-years in the incidence component of the study. It may be argued that the individual who died in Connecticut could be added to the incidence study if one assumes he lived in Connecticut from the time period of his last known address until his date of death and that the cause of death is accurate. If so, this would add one prostate cancer case to the incidence study. However, the four out-of-state deaths should not be added to the incidence study as their person-years of follow-up subsequent to their last known Connecticut address likely occurred as non-Connecticut residents and thus they would be ineligible for the incident study (as would any other study subject who had left Connecticut and was not diagnosed with cancer).

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Table.—Observed and Expected Cancer Incidence and Mortality, SIRs and SMRs, and 95% Confidence Intervals Among Allyn's Point Plant Male Employees, 1952-1989 (N = 666)

	Cancer Incidence				**Cancer Mortality**			
	Obs.	**Exp.**	**SIR**	**95%CI**	**Obs.**	**Exp.**	**SMR**	**95%CI**
All Cancers	47	38.0	124	91-165	23	26.4	87	55-131
Buccal cavity, pharynx	0	2.2	0	0-166	0	0.9	–	–
Digestive System	12	10.2	118	61-206	7	7.1	99	39-203
Esophagus	2	0.7	299	36-1078	2	0.8	253	31-915
Stomach	1	1.4	–	–	2	1.2	174	21-628
Large intestine	7	4.0	176	71-362	2	2.4	82	10-296
Rectum	2	2.3	86	10-310	1	0.6	–	–
Liver	0	0.3	–	–	0	0.6	–	–
Gall Bladder	0	0.2	–	–	*	*	*	*
Pancreas	0	1.1	–	–	0	1.4	–	–
Respiratory system	13	9.5	137	73-235	9	9.0	100	46-190
Larynx	5	1.2	417	135-972	1	0.4	–	–
Trachea, bronchus, lung	8	8.1	99	43-195	8	8.6	94	40-184
Bone	0	0.1	–	–	0	0.1	–	–
Malignant melanoma of skin	4	1.6	253	69-648	0	0.7	–	–
Prostate	4	4.1	98	27-251	4	1.4	290	79-742
Testes	2	0.6	323	39-1165	0	0.2	–	–
Bladder	3	3.0	100	21-292	0	0.6	–	–
Kidney	1	1.4	–	–	0	0.7	–	–
Brain	0	1.1	–	–	0	0.9	–	–
Thyroid	0	0.3	–	–	0	0.1	–	–
Hodgkin's Disease	1	0.5	–	–	0	0.3	–	–
Non-Hodgkins Lymphoma	1	1.2	–	–	1#	0.9	–	–
Multiple Myeloma	1	0.4	–	–	*	*	*	*
Leukemia	2	1.2	171	21-617	2	1.0	206	25-745
Other and unspecified	3	1.3	231	48-674	0	2.2	0	0-171

#Refers to cancer of lymphatic tissue excluding Hodgkin's Disease, lymphosarcoma, and reticulosarcoma.
*Not possible to calculate with mortality analyses.

We examined the correlation between incident cancer and death certificate data. Twenty-five were incident cancer cases who subsequently died. Of these 25 cases, 16 (64%) had their cancer incidence listed as the underlying cause of death on the death certificate. Five (20%) had their incident cancer listed in Part II of the death certificate (Other Significant Conditions). Four (16%) employees did not have their incident cancer listed anywhere on the death certificate. Of these four individuals, three were diagnosed with colon cancer but they died, according to the death certificates, of nonmalignant cardiovascular and pulmonary diseases. The fourth individual had been diagnosed with esophageal cancer according to Connecticut Tumor Registry records but died from stomach cancer according to the death certificate.

Analysis of a 15-year induction-latency period did not result in any substantial differences in the SIRs or SMRs for cancer incidence or mortality (data not shown). Altogether there were 32 observed cancer cases (27.6 expected, SIR 116, 95% CI 79-164). There were three laryngeal cancer cases compared to 0.9 expected (SIR 341, 95% CI 70-996). For cancer mortality there was a total of 14 observed deaths compared to 15.4 expected (SMR 91, 95% CI 50-152).

By limiting the analyses to operations employees (data not shown), we observed an SIR for all cancers of 137 (40 observed cancer cases, 29.1 expected, 95% CI 98-187). The SMR for all cancer deaths was 119 (22 observed, 18.5 expected, 95% CI 75-181). Laryngeal cancer incidence was the only statistically significant result (5 observed, 0.9 expected, SIR 543, 95% CI 176-1268). There was only one death from laryngeal cancer (0.3 expected). Nonsignificant excesses which involved three or more incident cases among operations employees included: colo-rectal cancer (6 observed, 4.8 expected, SIR 125, 95% CI 46-272); lung cancer (8 observed, 6.2 expected, SIR 129, 95% CI 56-255); malignant melanoma (3 observed, 1.2 expected, SIR 242, 95% CI 50-707); prostate cancer (4 observed, 3.1 expected, SIR 128, 95% CI 35-528), and bladder cancer (3 observed, 2.3 expected, SIR 130, 95% CI 27-381). Taking into account a 15-year induction-latency period did not substantially alter the SIR for all cancer (29 observed cancer cases, 20.9 expected, SIR 139, 95% CI 93-199) or the SMR (14 observed cancer deaths, 11.9 expected, SMR 118, 95% CI 64-198). With the 15-year induction-latency period considered in the analyses, we observed no specific cancer type to be statistically significant. However, the SIR for laryngeal cancer remained elevated (3 observed, 0.7 expected, SIR 455, 95 % CI 94-1328).

For the administration classification (data not shown), there was a total of five observed cancer incidence cases compared to 9.9 expected (SIR 50, 95% CI 16-117). The five cancer cases were large intestine (n = 2), testes (n = 1), bladder (n = 1), and Hodgkin's Disease (n = 1). There was only one cancer death compared to 8.3 expected (SMR 12, 95% CI 1-67). This death was from prostate cancer. The SIRs and SMRs were similar with a 15-year induction-latency period analysis.

Discussion

This study design presented a unique opportunity to examine cancer incidence and cancer mortality for a cohort of active, retired, and inactive chemical employees over the entire lifetime operations of a chemical plant. Furthermore, the period of follow-up was substantial (n = 38 years). Cancer incidence surveillance encompassed inactive as well as active and retired employees all of whom had maintained their residence in Connecticut.

Studies of cancer incidence among occupational cohorts, like the present one, have certain limitations in the United States. First, there is not a national tumor registry system. At best, there are state-based tumor registries which means record linkage is restricted to smaller geopolitical areas. Second, most population-based tumor registries are relatively new (ie, within the last five to 20 years). An exception is the Connecticut Tumor Registry which was established in 1935.[12] This is a major reason why this study was undertaken. A major limitation is the determination of residential status for follow-up purposes which is often uncertain for employees who have left the company. Often residential status is only known through the last known date of driver's license registration with a state's motor vehicle department. This loss-to-follow-up leads to fewer person-years of follow-up and therefore reduced statistical power. Thus, this study's limitations included: 1) the relatively small study population size; 2) the reduced number of person-years for follow-up because of the uncertainty of the Connecticut address for some members of the study cohort; and 3) the lack of any exposure-specific or duration-of-employment data beyond those of the dichotomous job classifications.

Because of the possibility of multiple primaries, cancer cases were followed until their death or end-of-study period rather than their date-of-cancer diagnosis. Because the diagnosis of cancer may have occurred considerably prior to death (or the end of the study follow-up), there was the distinct possibility that the person-years at risk, especially for cancers with low case-fatality rates, might have been over-estimated. To determine the extent of this bias, we recalculated the expected number of incidence cancer cases using the date of diagnosis as end of follow-up for those specific cancers with three or more observed cases. The expected numbers declined slightly. The decrease (in parentheses) in expected incident cancer cases were: large intestine (0.08), prostate (0.02), lung (0.01), larynx (0.02), bladder (0.03), and melanoma (0.01). These small differences in expected numbers were due to the few observed cases of each specific cancer as well as the low survival rate of several of these cancers.

Undoubtedly, some former employees chose to move to other states since electing to take retirement or after quitting at the company's Allyn's Point location. In this study they were ineligible to contribute person-years after leaving Connecticut because of the statewide-only coverage of the Connecticut Tumor Registry. This restricts the inferences which can be drawn if the cancer experience of retirees and former employees who are not residents of Connecticut could differ from that of retired or inactive residents. However, we are unaware of any data to support such a hypothesis. Besides the 47 incident cancers, we did find five additional cancer diagnoses (four out-of-state) utilizing a standard death certificate search.

Like others,[18] we noticed that for those cancers with high case-fatality rates (eg, esophagus, stomach, pancreas, lung, and brain), the observed and expected mortality and incidence were comparable. SIRs and SMRs differed the most for those cancers whose case-fatality rates are low (ie, less than 50%).

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No attempt was made to classify employees by their potential for exposure to specific chemical or physical agents. By first stratifying employees into broad, yet homogeneous groups (ie, major first job classification) it was possible to identify whether cancer risks may be higher in some subsets of the population. We observed a higher SIR for total cancer incidence (SIR 137, 95% CI 98-187) in the operations class than we did the administration class (SIR 50, 95% CI 16-117). The higher SIR for total cancer incidence among operations employees was due to a highly significant elevation in laryngeal cancer incidence and a combination of rather moderate, nonsignificant elevations across several different types of cancers. Although the employees classified as administration had a much lower cancer incidence risk (SIR 50) than the operations employees (SIR 137), any interpretation is severely constrained by the few number of administration employees analyzed in this study. Such differences, if supported with further follow-up of this cohort in the future, could be due, in part, to potential differences in lifestyle as well as occupational histories. For the present study, we undertook an extensive evaluation of the laryngeal cancer cases. Interpretation of the remaining individual cancer sites study results among operations employees are limited, at this time, by the weak associations observed.

Of the five incident laryngeal cancer cases, three were deceased at the end of the follow-up period. Underlying causes of death were prostate cancer, laryngeal cancer, and pneumonia. Although we did not have Connecticut residential address history past 1989, we nevertheless linked the records of 666 cohort members through 1992 with the registry data to determine if there were any additional laryngeal cancer cases. There were no additional cases.

Four of the five laryngeal cancer cases began employment at the plant prior to 1960 whereas only 36.3% of the study cohort began working at the plant prior to 1960. A review of the Allyn's Point work history information showed that the five individuals had diverse work experiences while at the plant. Case #1 worked from 1955 to 1978 and was a carpenter. Case #2 worked from 1971-1974 and worked in a warehouse. Case #3 worked from 1959-1961 and had experience both as a janitor and as an extruder operator. Case #4 worked from 1952-1969 and was a vapor still operator and a yardman. Case #5 worked from 1952 to 1972 and was primarily a yardman. The extruder operator worked with the operation of the polystyrene polymer from the extruder dyes and cooling water baths to the pelletizers. The vapor still operator worked in the area of boilers and steam boilers. The yardman was responsible for site-wide waste pickup and disposal and maintenance of the grounds. Routine waste disposal included handling latex polymer wastes, latex plant organic wastes, styrene distillation still bottom tars, and cleaning solvent wastes. We do not know the non-Dow Chemical work histories of these cases.

According to records of the Connecticut Tumor Registry, all five employees with laryngeal cancer were known to have been cigarette smokers with moderate to heavy use of alcohol. This combination of exposures is a well-known risk factor for laryngeal cancer.[19]

Our review of the Allyn's Point work histories of these five laryngeal cases led us to conclude that this finding was inconsistent with a common occupational hazard at the chemical plant. Occupational exposure to strong acid mists has been associated with laryngeal cancer.[20] Other than the possibility of a potential for chance exposure at a bench laboratory, there was no potential for exposure to strong-acid mists, in particular sulfuric acid, at this plant. Chemical exposure to acrylonitrile, butadiene, and styrene were possible. None of these, however, has been associated with laryngeal cancer although most epidemiologic studies have been mortality-based.[21-25] We have not observed an increased risk for mortality from laryngeal cancer at other Dow Chemical manufacturing facilities although substantial risks ratios for specific process areas or chemical exposures could have been masked by surveying the entire division populations.[4-9]

We will continue to monitor the cancer incidence and mortality surveillance of this cohort because of the overall higher SIRs observed among the operations employees and the statistically significant increase observed for laryngeal cancer.

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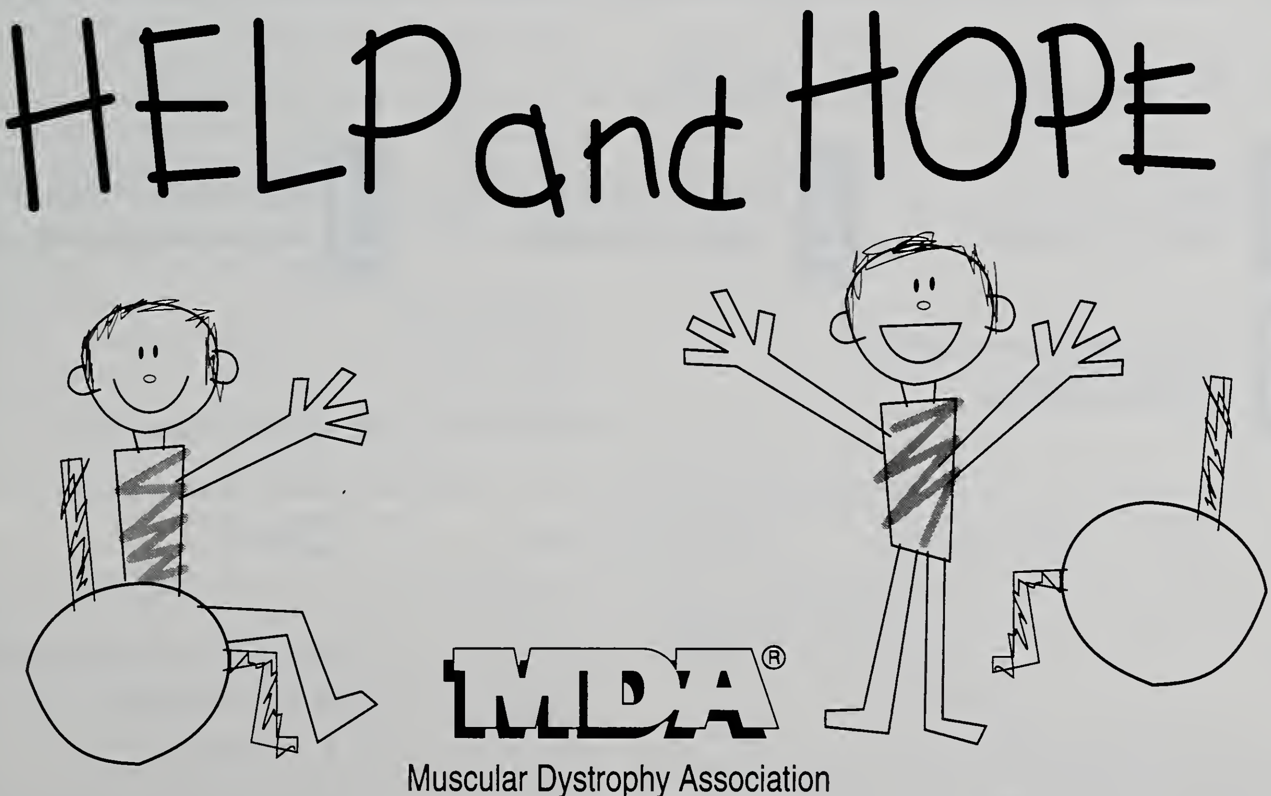

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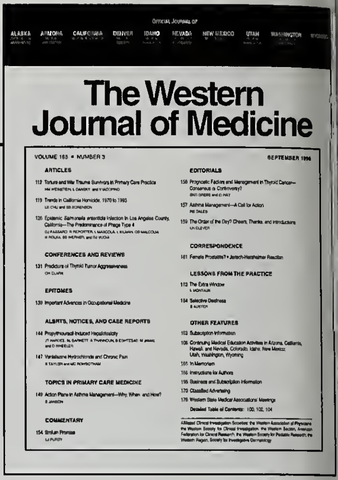

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Successful Coronary Stenting Without Warfarin or Intravascular Ultrasound

MARK F. WARNER, M.D., CYRIL NATHANIEL, M.D., AND JOSE C. MISSRI, M.D.

ABSTRACT—Although warfarin is typically recommended in the management of patients following coronary stent implantation, several studies have suggested a reduced incidence of subacute thrombosis if the antiplatelet drug ticlopidine is employed instead. Postdilatation with a high pressure balloon catheter is now commonly performed following stent deployment. However, there is uncertainty whether intravascular ultrasound is important in assessing adequacy of stent expansion. Some investigators have proposed a set of ultrasound criteria that need to be met in order to achieve optimal stent deployment. Others have reported low rates of subacute stent thrombosis using empiric high pressure postdilatation rather than an ultrasound-guided strategy.

We retrospectively studied 100 consecutive patients in a single institution who received coronary stents for a variety of indications. No patient received warfarin or intravascular ultrasound, and all were followed for a minimum of six weeks. Subacute stent thrombosis did not occur in any patient. We conclude that an excellent result can be routinely obtained in stented patients without the use of intravascular ultrasound.

Abbreviations Used in Text

STRESS = Stent Restenosis Study
Benestent = Belgium-Netherlands Stent Study
IVUS = intravascular ultrasound
PTCA = percutaneous transluminal coronary angioplasty

Introduction

THE use of intracoronary stents has become commonplace. Initial studies of stent implantation, including the Stent and Restenosis Study and the Belgium–Netherlands Stent Study (STRESS and Benestent), reported an incidence of subacute stent thrombosis in excess of 3%.[1-3] Since the advent of routine high pressure dilatation following stent deployment and the substitution of ticlopidine for warfarin in the anticoagulation protocol, investigators have reported a marked decline in the subacute thrombosis rate to around 1% or less.[4-8] However, it remains unclear whether optimal stent deployment as assessed by intravascular ultrasound (IVUS) is essential in obtaining this lower incidence of stent thrombosis.[7] Studies using IVUS have demonstrated that stent deployment may be inadequate in up to 80% of cases by ultrasound criteria despite an excellent angiographic appearance.[8-11] Other investigators, however, have achieved excellent clinical success without using IVUS routinely.[12,13] We report our results in 100 consecutive stent patients in which IVUS was not employed.

Methods

Between April 1995 and March 1996, 112 patients at our institution had successful implantation of a coronary stent. Both the Palmaz-Schatz and the Gianturco-Roubin stents were employed at the discretion of the interventional cardiologist. Stenting was attempted in an additional eight patients during this period but was unsuccessful for a

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variety of reasons. Patients were excluded from analysis if IVUS was utilized to assess adequacy of stent deployment or if warfarin was administered as recommended to prevent stent thrombosis. A total of 100 patients met the study criteria and were followed for a minimum of six weeks in order to assess the incidence of subacute thrombosis.

Nine patients were excluded from this study because IVUS was employed following stent placement. We employed IVUS in six of the first eight patients to receive a Palmaz-Schatz stent in our institution primarily because of published reports suggesting IVUS was of critical importance postdeployment. The other three patients had IVUS performed because of a suboptimal appearance of the stented segment by angiography. Three patients received warfarin following stent placement during the study period and were therefore excluded. One patient had a totally occluded vessel prior to the percutaneous transluminal coronary angioplasty (PTCA) and received two stents to cover a long dissection. Another patient had a thrombotic vein graft treated initially with extraction atherectomy and subsequently developed a rash on ticlopidine. The third patient received a Gianturco-Roubin stent for threatened closure after only two patients had been treated with aspirin and ticlopidine and prior to the Palmaz-Schatz stent being available in our institution.

Stenting Procedure.—Stents were inserted electively to prevent restenosis, for angiographically suboptimal results following PTCA, or for threatened or abrupt closure usually due to PTCA-induced coronary dissection. High pressure dilatation was performed afterwards in each case using a noncompliant balloon catheter until a satisfactory angiographic result was obtained. In general, balloon pressures between 16 and 20 atmospheres were employed within the stented segment, although occasionally pressures of 14 atmospheres were chosen at the discretion of the operator. All patients were pretreated with aspirin, and most were started on ticlopidine at the time of the procedure or soon thereafter. In some cases in which stenting was planned beforehand, ticlopidine was begun prior to the procedure. Ticlopidine was continued at a dosage of 250 mg twice daily for three weeks only in order to minimize the risk of drug-induced neutropenia. Heparin was not continued overnight unless sheath removal was planned for the following morning. Patients were discharged from the hospital as soon as it was clinically feasible, often on the day following the procedure.

Follow-up.—All patients were followed clinically by their respective cardiologists following the procedure. Repeat angiography was only performed if recurrent symptoms suggested restenosis. Patients were assumed to be free from subacute stent thrombosis if they did not present with myocardial infarction or have stent closure demonstrable on repeat coronary angiography. Of the 100 study patients 10 have undergone repeat angiography.

Results

Clinical Characteristics.—The mean age of the study population was 62±12 years and 74% were male. All patients were followed for at least six weeks after stenting with the mean follow-up time being 21±10 weeks. The vessels stented are listed in Table 1. Gianturco–Roubin stents were place in eight patients and Palmaz-Schatz stents in the remainder. One patient received multiple Palmaz-Schatz biliary stents in two saphenous vein grafts. Two stents were required in 13 patients, three stents in three patients, and two patients received four overlapping stents. In all, 125 stents were implanted in 100 study patents. The reasons for stent placement are listed in Table 2.

Outcome.—None of our 100 patients experienced subacute stent thrombosis. In addition, there were no deaths or Q-wave myocardial infarctions. All patients were able to be discharged eventually without further intervention. One patient suffered a non-Q-wave myocardial infarction in conjunction with successful stent deployment because of poor distal flow in the right coronary artery. In this case, distal flow worsened after stent implantation and each subsequent high-pressure balloon inflation, presumably because of embolization of atheromatous debris from the lesion site. Repeat angiography six weeks later revealed no stenosis within the stented segment and normal distal flow in the right coronary artery.

Repeat coronary angiography was performed in 10 patients for recurrence of symptoms. Three of these patients were found to have restenosis within the stented segment at three, 3.5, and seven months following stent placement. Therefore, angiographic evidence of restenosis was documented in only 3% of our patient population over an average follow-up time of five months. Two of the three patients with restenosis had a stent placed within a saphenous vein graft. Bypass surgery was recommended for two patients having stent restenosis, and repeat PTCA within the stented segment was successful in the other one.

Discussion.—The use of intracoronary stents for a variety of indications has rapidly increased at our institution as it has elsewhere. We initially performed stenting only for acute or threatened closure following PTCA, and patients were hospitalized for five to seven days following the procedure until the recommended level of anticoagulation with warfarin was obtained. Because of this additional length of stay as well as the 3% to 4% risk of subacute thrombosis, we were initially reluctant to place stents electively in order to reduce the risk of restenosis. However, the first two patients in our series had Gianturco–Roubin stents placed for severe dissections and threatened closure but were not felt to be suitable candidates for warfarin therapy by their private physicians. These two patients therefore received the aspirin and ticlopidine regimen on a compassionate basis and have done well

Table 1.—Vessels Stented in 100 Consecutive Patients

Vessel	**Number (%) of Patients**
Left Anterior Descending	38
Left Circumflex	16
Right Coronary Artery	33
Left Main Coronary Artery	1
Saphenous Vein Graft	10
Multiple Coronary Arteries	2

Table 2.—Reasons for Stenting in 100 Consecutive Patients

Reason	**Number (%) of Patients**
Elective	30
Restenosis	24
Saphenous Vein Graft	10
Acute Closure after PTCA	6
Dissection with Threatened Closure	23
Suboptimal PTCA result	7

since. Managing stent patients with only aspirin and ticlopidine rapidly became the standard thereafter in our institution.

Since the publication of the STRESS and Benestent trials there have been multiple reports demonstrating a lower incidence of subacute thrombosis using only antiplatelet therapy instead of warfarin following stent implantation.[4-6,13,14] However, high-pressure balloons were not used routinely to postdilate stents in STRESS and Benestent. Therefore, there have been two major changes in stent deployment strategy since these trials; namely, substitution of ticlopidine for warfarin, and routine stent postdilatation using high-pressure balloons. Either one or both of these changes may be responsible for the declining incidence of stent thrombosis.

Intravascular ultrasound catheters have played a major role in shaping our understanding of adequacy of stent deployment. Several criteria have been proposed to define "optimal" stent deployment. These include complete apposition of the stent to the vascular endothelium, symmetrical stent expansion, and adequate cross-sectional area within the stented segment relative to a distal reference segment.[11] Despite an excellent angiographic appearance of the stented segment, investigators have reported that IVUS criteria for optimal stent deployment are not met in 24% to 80% of cases.[8-11] After IVUS criteria have been satisfied, subacute thrombosis rates as low as 0.8% have been reported in patients treated with ticlopidine and aspirin.[5-6]

Other groups of investigators have reported similar reductions in the rate of stent thrombosis when using IVUS only sporadically or not at all.[13,15] Their results would suggest that empiric high-pressure postdilatation combined with aspirin and ticlopidine are all that are clinically necessary in order to obtain subacute thrombosis rates of 1% or less. In a recent report stent patients receiving aspirin alone and no IVUS had a subacute thrombosis rate of 1%.[14] This raises the question of whether meeting IVUS criteria for optimal stent deployment is clinically important. One can safely assume that among our 100 patients, a significant number would not have demonstrated optimal stent deployment by IVUS criteria. Nevertheless, none of them have experienced subacute thrombosis with antiplatelet therapy .

To our knowledge, an absence of subacute thrombosis has only been reported twice to date in the literature. In the Benestent–II Pilot Study, stent thrombosis did not occur when using a heparin-coated Palmaz–Schatz stent.[12] All patients in this study had stable angina due to a single *de novo* coronary artery lesion, and IVUS was employed in 8% to 20% of patients. The other report involves 82 patients from the University of Alabama receiving Palmaz-Schatz stents in native coronary arteries.[15] These patients were selected from 95 consecutive patients based on an optimal angiographic appearance of the stented segment, and all were treated with aspirin and ticlopidine. Despite IVUS not being performed in any patient, subacute stent thrombosis did not occur.

Patients were not excluded from receiving a stent in our institution on the basis of any clinical or angiographic criteria, including lesion-associated thrombus. Stents were placed electively in *de novo* coronary artery lesions in only 30% of cases. In another 24% of patients, stenting was elective but was performed for early restenosis, and 10% of patients had elective stent placement in saphenous vein grafts. The remaining patients (36%) all had unplanned stent placement following PTCA for severe dissection, poor results, or vessel closure. Although the Palmaz-Schatz stent was primarily employed, 8% of our patients received the Gianturco–Roubin device. Importantly, our study group represents a consecutive series with no patient being excluded for a suboptimal angiographic result.

We believe that these factors make our population highly representative of the day-to-day patient mix seen in most institutions. It is not clear why our results should match or exceed those from institutions routinely using IVUS to assess stent expansion. It is our practice to strive for the best angiographic result obtainable and not to accept suboptimal results. If there is a question of haziness within the stent, uncovered dissection, narrowed inflow to or outflow from the stented segment, or any stenosis of the

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stented segment relative to the reference vessel, then the result is deemed suboptimal. At that point, we elect to do one of several things: 1) deploy additional overlapping stents, 2) postdilate to a pressure of approximately 20 atmospheres, or 3) postdilate with a larger high pressure balloon. As a last resort, IVUS would be used if the operator remained dissatisfied with the angiographic result. No patient in our institution has received platelet membrane glycoprotein antagonist in conjunction with coronary stenting.

It was not the purpose of this study to assess rates of restenosis following successful stent implantation. Our clinical restenosis rate of 3% is exceedingly low, although not unlike the 6% rate noted in the Benestent-II pilot study patients treated with aspirin and ticlopidine. One might expect a higher rate of restenosis in our patients had they all been subjected to repeat angiography or followed for a longer period of time.

In summary, we have found that coronary stents may be successfully implanted regardless of the clinical situation without assessing IVUS criteria for optimal deployment. With careful angiographic assessment of the stented segment and further intervention if necessary, we have observed no subacute stent thrombosis when using aspirin and ticlopidine for poststent management. Our results suggest that bonding heparin or other substances to the stent may be unnecessary. In addition, our study suggests that suboptimal stent deployment by IVUS criteria is not of clinical importance.

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Important Advances in Clinical Medicine

Obstetrics and Gynecology

W. Gordon Peacock, MD, Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in obstetrics and gynecology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Obstetrics and Gynecology of the California Medical Association, and the summaries were prepared under the direction of W. Gordon Peackock, MD, and the panel.

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Prematurity—Steroids for All

OVER the past decade, perinatal mortality in the United States has fallen to rank a dismal 22nd in the world. The source of this national problem is our extraordinary high rate of preterm births. About 8% of births in the United States occur before 37 weeks of gestation. This has driven health professionals, government agencies, and entrepreneurs to develop new and different measures to prevent or ameliorate the consequences of prematurity. Unfortunately, few of the new approaches have lived up to hopes: screening tools for high-risk pregnancies, home uterine activity monitors, and tocolytic drugs—medications used to treat contractions—have all been mired in controversy over how much benefit, if any, they offer. Often overlooked is the real breakthrough of administering corticosteroids to a woman to advance the pulmonary maturation of her preterm infant.

In the past 24 years, more than 20 randomized, double-blind, controlled trials have shown that prenatal corticosteroid use leads to a major reduction in the incidence of the respiratory distress syndrome, the major cause of neonatal mortality and morbidity. The degree of reduction is dramatic: following an optimal course of betamethasone sodium phosphate, 12 mg given intramuscularly every 12 or 24 hours for two doses and the delay of delivery for 48 hours from the first dose (good for seven days), the incidence of the respiratory distress syndrome is reduced by 67%. The incidence of the second leading cause of neonatal morbidity, intracranial hemorrhage, is reduced by 50%, that of necrotizing enterocolitis by 65%, and neonatal deaths overall by nearly 40%.

Side effects have been surprisingly limited despite the fact that these are large doses of steroids—12 mg of betamethasone is equivalent to 60 to 80 mg of prednisone. The incidence of maternal and neonatal infections is not increased. Adrenal suppression has been reported only in isolated cases. Long-term (≥10 years) follow-up studies of exposed neonates have shown no ill effects. The early association with maternal pulmonary edema was later found to be related to the use of tocolytic drugs and injudicious fluid administration. The only caution is the use of betamethasone in women with diabetes mellitus. Insulin requirements may double. Careful monitoring of plasma glucose levels to prevent diabetic ketoacidosis is mandatory.

There is a wide range of benefits: fetuses as small as 500 grams and as old as 34 weeks are notably benefited. Fetuses with preterm rupture of the membranes have a reduced incidence of the respiratory distress syndrome of

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50% from corticosteroid administration. Contrary to the results of initial studies, infants of women with hypertensive disorders respond well to the use of steroids and, when monitored closely, have no increased risk of stillbirth. The recent development of postnatal surfactant administration to infants with respiratory distress has not rendered the use of steroids obsolete. The benefits of corticosteroid use have been clearly shown to be additive to those of surfactant use.

This drug has been intensively studied. The real question is, why is it so little used? Some estimates suggest that only 30% to 40% of preterm infants receive steroids before birth. To address this issue, the National Institute of Child Health and Human Development recently sponsored a consensus development conference that strongly supported the widespread use of this treatment. The data in their document substantiating the benefits of prenatal corticosteroid use are overwhelming. A more widespread use could save more than $35 million each year.

Which mothers should receive corticosteroids? If a complication that could lead to preterm birth develops in a woman at any point between 24 and 34 weeks of gestation, one of the first medications she should receive is 12 mg of betamethasone intramuscularly (repeated once in 12 or 24 hours). These conditions include preterm labor with cervical change; a need for parenteral tocolytic drugs; preterm rupture of the membranes; vaginal bleeding from placenta previa, abruption, or marginal sinus rupture; or admission to the hospital for medical complications such as preeclampsia.

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Intracytoplasmic Sperm Injection

A DEFICIENT number of normally formed and active spermatozoa is thought to be responsible for as many as 40% of cases of human infertility; yet, with the possible exception of varicocele repair, not a single effective treatment to increase male fertility has appeared since Leeuwenhoek first viewed sperm through his primitive microscope 300 years ago. Artificial insemination using the sperm of the husband was first described in the 19th century and widely applied despite a lack of evidence of its efficacy. In the past 10 years, efforts to concentrate sperm and place them closer to the egg by direct insemination into the uterus have met with modest success. For men with sperm concentrations of less than five million per ml (normal, 20 million per ml) or with abnormalities of motility or structure, however, only in vitro fertilization (IVF) has been available. Because sperm from infertile men are often deficient in their capacity to penetrate the zona pellucida that surrounds the egg, even IVF results have been generally disappointing as a treatment of male factor infertility.

In an effort to allow the sperm to breach the zona barrier, various techniques were developed that involved cutting or mechanically disrupting the zona or attempting to create openings by introducing acids or enzymes. These methods not only damaged the oocytes or blastomeres, but they often allowed more than one sperm to enter the egg (polyspermia). The first technique to achieve some success involved placing a single motile sperm in the perivitelline space with a thin glass micropipette and was known as subzonal insertion, or SUZI. In 1992, while performing SUZI in Brussels, Van Steirteghem inadvertently injected a sperm directly into the egg cytoplasm and noted that his fortuitous error resulted in an apparently normal fertilization. His report of four pregnancies by this method reestablished the concept of intracytoplasmic sperm injection (ICSI), a technique that had been tried but abandoned by North American investigators four years earlier.

Since 1992, ICSI has replaced all other techniques in the treatment of severe male infertility by allowing for pregnancy in cases with markedly reduced numbers of normal sperm. After exogenous gonadotropin stimulation, several oocytes are removed from their follicles by needle aspiration using transvaginal ultrasonographic guidance. In the laboratory, a single sperm is injected into the cytoplasm of each oocyte with an extremely fine glass needle. With experience, fertilization will occur in about two thirds of injected eggs, and only about 5% will be lost through mechanical trauma. Intracytoplasmic sperm injection adds about $1,000 to the cost of a $6,000 to $8,000 IVF cycle and achieves the same pregnancy rate as when IVF is performed with normal sperm, about 20% to 40% per cycle. More recently, ICSI has been extended to the treatment of men who have zero sperm counts as long as sperm can be microsurgically removed from the epididymis, such as in men with congenital absence of the vas deferens. The latest finding is that the use of even round-headed sperm (which lack an acrosome) can result in fertilization, thus allowing for the use of "immature" sperm cells recovered by biopsy directly from the testis itself.

Although concerns have been raised concerning the unintentional selection of genetically abnormal sperm, the effects of physical damage to the oocytes, and the transmission of genetic diseases that are linked to male infertility (such as cystic fibrosis and congenital absence of the vas), the first several hundred babies delivered after ICSI have not shown an increase in congenital malformations. So far, ICSI has not only proved to be a stunning advance in the treatment of male infertility, it is also a powerful tool to study the microdynamics of human fertilization.

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Androgen Replacement in Postmenopausal Women

THE benefits of estrogen replacement in postmeno pausal women are well established. Estrogen replacement decreases the risk of cardiovascular disease, protects against osteoporosis, reverses atrophic genital changes, eliminates vasomotor symptoms, and improves cognitive function. The most common side effect of estrogen replacement is abnormal bleeding. Endometrial hyperplasia and adenocarcinoma are rare if appropriate doses of progestin are administered. Most current studies do not show that the risk of breast cancer is substantially increased by estrogen replacement, although further investigations are needed.

Increasing attention is being paid to the role of androgen replacement in postmenopausal women. The thought that estrogen was exclusively a female hormone and that testosterone was a male hormone is no longer valid. In women, testosterone and androstenedione are produced by both the premenopausal and postmenopausal adrenal glands and ovaries. Androstenedione is a steroid precursor that is converted to estrogen and testosterone in peripheral tissue. Estrogen production in postmenopausal women is almost exclusively the result of peripheral aromatization of androstenedione from the adrenal glands. Androstenedione production decreases by 50% when a woman enters menopause. Most of this decrease is the result of decreased ovarian production of androstenedione. Testosterone production decreases by close to 30% in menopause. Most of this decrease is due to a fall in nonovarian production of testosterone.

Both estrogen and androgen are thought to play crucial roles in female sexual behavior. In the female brain, testosterone receptors are located in areas involved with libido and emotions. Testosterone deficiency has been shown to result in a loss of libido. Administering testosterone combined with estrogen is superior to the use of either estrogen alone or placebo in the treatment of postmenopausal women with a loss of libido. The benefits of testosterone use seem to be greater in women who undergo surgical menopause than in those who undergo natural menopause. This finding is consistent with the knowledge that postmenopausal ovaries continue to produce testosterone at premenopausal levels even though the production of androstenedione decreases considerably.

Administering estrogen and androgen may have a synergistic effect on improving mood and sense of well-being in postmenopausal women. This is important because depression is encountered twice as often in women as in men. Controlled studies involving women who had undergone surgical menopause by total abdominal hysterectomy and bilateral salpingo-oophorectomy have shown that testosterone supplementation has a positive effect on energy level, sense of well-being, and appetite. When these women are given estrogen combined with testosterone, they have fewer somatic complaints such as hot flushes, cold sweats, and headaches than when they are given either estrogen alone or placebo. They also have fewer complaints such as fatigue, irritability, nervousness, depression, poor memory, insomnia, inability to concentrate, crying spells, panic attacks, and indifference when treated with estrogen combined with testosterone than when treated with estrogen alone or placebo. It has not yet been established whether estrogen combined with testosterone offers postmenopausal women any additional protection against osteoporosis beyond that which is gained from estrogen administration alone.

Testosterone can be administered orally, parenterally by injection, or by subcutaneous pellets. Oral esterified estrogens or conjugated estrogen combined with methyltestosterone are most commonly used. These formulations contain 1.25 to 10 mg of methyltestosterone per tablet and can be administered cyclically in a regimen identical to that of estrogen administered alone. As is the case with the use of estrogen alone, women must be given progestin in an appropriate regimen to protect against endometrial hyperplasia and carcinoma unless they have undergone hysterectomy.

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The possible side effects of testosterone administration, which include hirsutism, skin oiliness, and acne, have an incidence of less than 1%. Although rare, hirsutism may be encountered in Hispanic or Mediterranean women. These women can be managed with the addition of oral spironolactone, 100 mg each day. Changes in voice and clitoromegaly are extremely rare with low doses of testosterone. There have been concerns that the use of testosterone might result in adverse changes in cholesterol, high-density lipoprotein, low-density lipo-protein, and triglyceride levels that would blunt or reverse the protective effects of estrogen against cardiovascular disease. Most studies have found that when administered in low doses, testosterone had no significant adverse effects on the lipid profile.

Further investigations concerning androgen replacement in postmenopausal women are necessary. There currently are insufficient data to support androgen replacement in all postmenopausal women. It appears that low-dose androgen replacement in postmenopausal women is safe, however. The addition of androgen to estrogen replacement may be useful in postmenopausal women who have a loss of libido and those who have persistent somatic or psychological symptoms despite being treated with high-dose estrogen replacement. In particular, women who have undergone surgical menopause may be candidates for androgen replacement therapy.

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Adolescent Contraception

RECENT studies have again shown that rates of sexual activity among teens in this country are not substantially different from these rates in other developed western countries. About a third of adolescent women in their freshman year of high school have been sexually active, and nearly two thirds of high school senior-aged women have. By the age of 19, the average North American man has had 5.11 partners. Adolescent pregnancy rates in the United States, however, are severalfold higher than most other countries. One of the keys for this discrepancy lies in our collective reluctance to discuss sexuality issues with or provide contraception to adolescents. Classic studies show that teens are interested in these topics; more than two thirds want to talk to their physicians about sexually transmitted diseases, contraception, and other sexually related issues. Because of their reluctance to ask direct questions and physicians' lack of initiative, however, it is far more likely a teen will wind up discussing menstrual problems with her physician instead.

Effective communication is the key to providing contraception to teens. This is challenging for physicians because mental maturity does not necessarily keep pace with physiologic development in adolescents. Teens are often concrete thinkers, focused on their physical appearances, and dedicated risk takers attempting to break away from authority figures. Ignoring these properties leads to failure in even the best-intentioned programs. For example, the "Just say no" message conveyed in the "secondary virginity" program promoted by the federal government in the late 1980s and early 1990s to help teen mothers was notably ineffective. More effective programs individually tailor the message of abstinence to each teen, provide concrete techniques to enable an adolescent to say no, and help create alternatives for tempted teens.

The most common form of birth control for adolescents long term is oral contraception. Among teens, the average failure rate for birth control pills is about 8%, but with more consistent use, the rates can be substantially lower. Incentives to better use can be found in the many noncontraceptive benefits provided by oral contraceptive pills. Teens whose dysmenorrhea was reduced with the use of oral contraceptive pills were eight times more likely to be consistent pill users. New Food and Drug Administration (FDA) decisions to include acne as a labeled indication for one type of oral contraceptive pill should broaden their appeal. Pregnancy risks can be reduced for women of all ages by shortening the placebo period. The risk of pregnancy is greatest after seven days without hormones. Women forgetting the last pills in their previous packages or starting a new package late are most vulnerable. To overcome this, women should take the placebo pills only until their menses start (or day four of the sugar pills). For teens with active lives (such as athletes), menses can be delayed by "bicycling" or "tricycling" their oral contraceptive pills—that is, taking the active pills in two or three packages without any intervening placebos. If the fear of a pelvic examination prevents an adolescent from seeking oral contraceptive pills, the procedure can be delayed for several months in an otherwise healthy young woman.

The long-acting progestin methods—Norplant and depot medroxyprogesterone acetate (DMPA or Depo-Provera)—are convenient, easy to use, and well tolerated by teens. As a result, they have failure rates of less than 1% and high continuation rates. Several studies of high-risk adolescents have shown one-year continuation rates for implants of more than 80% to 90% compared with 50% for oral contraceptives. The use of DMPA offers more privacy. Adolescents need to be counseled that initially spotting and irregular bleeding occur, but that over time, Norplant users tend to resume normal menses and medroxyprogesterone users usually have amenorrhea. Other hormone-related changes may also occur, and the patient should understand and be willing to accept them before she starts therapy.

Condoms are the method most frequently used at first intercourse, and they play a critical role in reducing the risk of acquiring or transmitting sexually transmitted diseases (STDs) when combined with other methods. Unfortunately, studies show that with teens, condoms alone as a method of contraception have a typical failure rate of about 20%. Barrier users need to understand that the method must be used with every act of intercourse before genital contact. Role playing with providers to learn how to ask their partners to use condoms can improve usage rates—both for pregnancy and STD risk reduction. For young women, vaginal contraceptive foam and condom are easily and discreetly carried in their wallets.

Other options exist for teens. Some older parous teens in stable, mutually monogamous relationships benefit greatly from the efficacy and ease of an intrauterine device, especially the T 380A copper IUD, which is approved for ten years of continuous use. Teens often use sexual practices for birth control (coitus interruptus) and for hymenal preservation (rectal and oral sex). Some of these practices should be discouraged because of infection risks.

The single most important option we can provide teens is emergency contraception with birth control pills. This has recently been approved by the FDA Advisory Board for both safety and efficacy. The need for emergency contraception in teens is well established. Studies show that 25% of college coeds are forced to have sex at least once during their four years of higher learning. Very young sexually active teens are often victims of sexual abuse. Middle teens may succumb to momentary passion. For each of these scenarios, the ability to prevent the exposure to sperm from translating into an unplanned pregnancy can make a pivotal contribution to a teen's lifetime potential. Recent studies show, however, that fewer than 10% of U.S. clinicians informed their patients of the availability of emergency contraception. Standard emergency contraception includes administering a dose of the combination of norgestrel and ethinyl estradiol (Ovral, 2 tablets) within 72 hours, followed by two more tablets 12 hours later. Other levonorgestrel- and norgestrel-containing pills may be substituted if the dosage is adjusted (Table 1). Over-the-counter antiemetics help control side effects.

Table 1.—Emergency Contraception (EC) with Oral Contraceptives*

EC	Within 72 hours tablets, no.	12 Hours later tablets, no.
Ovral	2	2
Lo/Ovral, Nordette, Levlen	4	4
Triphasil-21, Tri-Levlen 28 (yellow tablets)	4	4

*Ovral (Wyeth-Ayerst Laboratories) tablets contain 0.5 mg of norgestrel and 0.05 mg of ethinyl estradiol. Lo/Ovral (Wyeth-Ayerst Laboratories) tablets contain 0.3 mg of nongestrel and 0.03 mg of ethinyl estradiol. Nordette-21 (Wyeth-Ayerst Laboratories) tablets contain 0.15 mg of levonorgestrel and 0.03 mg of ethinyl estradiol. Tri-Levlen 28 (Berlex Laboratories) yellow tablets contain 0.125 mg of levonorgestrel and 0.03 mg of ethinyl estradiol.

Single-cycle pregnancy rates with emergency contraception are reduced to 2%, which represents a 75% reduction in pregnancy risk. There is now a toll-free emergency contraception hotline operated by the Office of Population Research at Princeton University for patients and professionals. This number is (800) 584-9911 for information about providers of emergency contraception.

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Managing Viral Exposure During Pregnancy

THE management of viral exposure and disease during pregnancy presents many unique challenges because of possible effects on both a woman and her developing fetus. Maternal rubella infection is a classic example of this. In 1984, before the use of the rubella vaccine, a major epidemic of rubella infection occurred in the United States. During that year, about 20,000 new cases of the congenital rubella syndrome and 11,000 pregnancy losses due to rubella infection occurred in the United States. Certain viruses, such as varicella, may also cause more severe maternal disease during pregnancy. Varicella pneumonia is a relatively common, potentially life-threatening complication of varicella infection during pregnancy.

For most viral diseases, the diagnosis in a pregnant woman rests on serologic testing. Many women with proven viral infection report few, if any, symptoms of infection. Diagnosis is made by demonstrating viral-specific immunoglobulin (Ig) M or a fourfold titer change in specific IgG levels. Routine serologic testing in the United States is currently recommended only for rubella, and if the woman is seronegative, vaccination is recommended after delivery.

As mentioned, varicella infection in pregnancy can cause severe maternal pneumonia in 5% to 10% of cases. Because of this, varicella zoster immune globulin (VZIG) should be given to all nonimmune pregnant women within 72 hours of exposure to varicella. Serologic testing should be done before VZIG is given because as many as 90% of women are immune. The effect of VZIG administration on fetal infection is unknown. Fetal disease—limb hypoplasia, cicatricial skin lesions, retardation, or cortical atrophy—occurs in less than 2% of fetuses. Maternal infection less than five days before delivery also causes neonatal infection due to the lack of time for the development of maternal protective IgG antibodies.

Parvovirus infection in pregnancy is one of the few treatable fetal conditions. The diagnosis in a pregnant woman is most commonly made after the discovery of nonimmune hydrops in her fetus. The diagnosis is confirmed either by maternal serologic testing or identification of the virus in amniotic fluid specimens by polymerase chain reaction (PCR). Parvovirus can cause bone marrow failure in the fetus, with fetal death occurring in as many as 5% of maternal infections. The hydrops resulting from this aplastic crisis has been successfully treated with the intrauterine transfusion of erythrocytes. In some cases, hydrops has resolved spontaneously. The current recommendation is for serial ultrasonograms to be done for as long as 16 weeks following maternal disease to monitor for the development of hydrops.

Cytomegalovirus is the most common cause of congenital viral infection. An estimated 0.2% to 2.2% of neonates are infected in utero, with 5% to 10% being symptomatic at birth. Fetal infection can occur with both primary and recurrent maternal infection; the likelihood of severe infection is much higher with primary infection, and early infection is associated with much more severe disease. Overall, fetal infection occurs in about 40% of cases of primary maternal infection. Although only 10% of infected infants are symptomatic at birth, symptoms, most commonly sensorineural hearing loss, will develop in an additional 5% to 10% by two years of age. Fetal infection in utero can be diagnosed by the culture of cytomegalovirus in the amniotic fluid or by PCR of amniotic fluid. The sensitivity of these two approaches is currently unclear.

Perhaps the virus with the greatest public health policy implication is the human immunodeficiency virus (HIV). The Centers for Disease Control and Prevention has reported that as of 1991, about 7,000 infants would be born each year to HIV-infected mothers and, of these, 1,000 to 2,000 would be infected. Because of this, a trial was begun in 1991 of maternal zidovudine therapy during pregnancy to prevent vertical transmission. Preliminary analysis of data from this trial has indicated a 67.5% reduction in the risk of HIV transmission. These results have led to the controversial recommendation that all women be screened for HIV during pregnancy and treated with zidovudine if infected.

What does the future hold for the diagnosis and management of viral diseases during pregnancy? An important advance will be the application of PCR-based diagnoses in fetuses. In this way, we will be able to more accurately identify affected fetuses. Also, new antiviral agents, if found safe for fetuses, may help decrease vertical disease transmission rates or actually treat fetuses in utero.

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Assisted Reproductive Technologies

ACCORDING to the most recent statistics published by the American Society for Reproductive Medicine, a total of 39,390 cycles of assisted reproductive technologies were initiated in the United States during 1994. A total of 9,573 deliveries occurred as a result of these technologies. Because of these high success rates, assisted reproductive technologies are increasingly being offered to infertile couples with a variety of diagnoses. Nevertheless, the most appropriate candidates for these technologies are those in whom other, more conventional treatments have failed. Patients with unexplained infertility are usually offered several cycles of superovulation and intrauterine insemination before proceeding to assisted reproductive technologies. Patients with pelvic factor infertility are appropriate candidates for in vitro fertilization (IVF), either after a failed tuboplasty or, if tubal disease is severe, in place of a pelvic reconstructive operation. Hydrosal-pinges, however, should be either removed or opened by a cuff neosalpingostomy to drain the hydrosalpinx before IVF. Couples whose infertility is due to a male factor—for example, the husband's sperm have decreased fertilizing potential—are also appropriate candidates for IVF and, if the semen analysis is markedly abnormal, may benefit from micromanipulation of the gametes

To enhance success, most assisted reproductive programs use controlled ovarian hyperstimulation before the collection of gametes. The most commonly used regimen includes pretreatment with a gonadotropin-releasing hormone agonist and subsequent stimulation with human menopausal gonadotropins (hMG). The recombinant form of follicle-stimulating hormone will be introduced in the United States in 1997, and its use will most likely replace that of hMG in the same way that recombinant insulin has replaced other preparations. Natural-cycle (or "unstimulated") IVF, which depends on the selection of a single dominant follicle by the patient's own reproductive axis, continues to occupy a small niche within the assisted reproductive technologies. Whereas unstimulated cycles are easier to do, cheaper, and spare the endometrium the adverse effects of controlled ovarian hyperstimulation, the success rate of natural-cycle IVF is consistently lower than that of stimulated cycles. It appears that two cycles of natural-cycle IVF are required to achieve the success of a single stimulated cycle.

A key element of the assisted reproductive technologies is the collection of the oocytes. The transvaginal ultrasound-directed follicle-aspiration method is now standard. It can be achieved outside of an operating room with conscious sedation. The gamete intrafallopian transfer (GIFT) procedure, which involves placing gametes into the fallopian tubes, still requires general anesthesia and an operating room for the laparoscopy. As microlaparoscopic techniques become more commonplace, conscious sedation may also be used for the GIFT procedure.

Oocyte donation, a logical consequence of oocyte collection, has also grown substantially. This is due to the unanticipated finding that oocyte quality is a major determining factor of the success of the assisted reproductive technologies. Therefore, women with reduced oocyte quality, diminished ovarian reserve, and those older than 40 benefit substantially from the donation of oocytes from younger women. According to the most recent statistics, 3,119 donor oocyte cycles were initiated in the United States during 1994 with an overall success of 46.8% deliveries per retrieval. The technique of oocyte donation presents a unique physiologic configuration, as the oocytes are retrieved from one woman and are donated to another woman. Therefore, both ovarian stimulation and endometrial preparation can be controlled independently. For this reason, success rates of oocyte donation are consistently the highest of all the assisted reproductive technologies. No decline in success rates has been observed with increasing age of the recipient. Therefore, it appears that whereas the ovary ages, uterine receptivity does not decline, even for recipients well into their sixth decade of life. Regardless of the source of oocytes, the trophoblast and fetus are always immunologically distinct from the mother. Therefore, oocyte donation presents no additional difficulties with "rejection."

Whether or not success rates of the assisted reproductive technologies have already been maximized is not yet clear. Each year still seems to bring higher success rates on an individual clinic basis, as well as the overall statistics for the country as a whole. An additional benefit of these technologies is that success rates do not appear to decline over successive cycles. Therefore, they can be repeated for as many as three to six cycles to achieve high cumulative pregnancy rates. In most cases, the limiting step in the overall success of these procedures is the cost. The cost per cycle ranges from about $6,000 to $15,000, depending on the clinic, the type of technology (laparoscopy adds substantial cost), other interventions (intracytoplasmic sperm injection or embro freezing), and the amount of gonadotropins required to achieve stimulation. Whereas many states have mandated the coverage of assisted reproductive technologies, most insurance companies in California still do not cover this service. The national trend, however, is toward increased coverage of infertility treatment, including a certain number of cycles (usually three) of treatment. Therefore, the future of these technologies appears headed toward technologic advancement, increased cost-effectiveness, and greater availability.

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DRUG INFORMATION UPDATE: HARTFORD HOSPITAL

Heparin Dosing: A Comparison of Weight-based Dosing *vs* Standard Dosing

C. MICHAEL WHITE, PHARM.D.

Introduction

HEPARIN is a glycosaminoglycan composed of chains of alternating residues of D-glucosamine and uronic acid.[1,2] Heparin is structurally related to heparan, an endogenous anticoagulant molecule imbedded in the walls of vascular tissue and has a similar biologic effect. Heparin's anticoagulant effect is attributed predominantly to its high affinity for antithrombin III (ATIII) and factor Xa.[1,2] When bound to heparin, ATIII undergoes a conformational change that markedly accelerates its ability to inactivate thrombin.[1] Simultaneously, heparin inhibits factor Xa which is the enzyme that induces conversion of prothrombin to thrombin. Since thrombin is primarily responsible for the conversion of fibrinogen to fibrin, which is an integral component of a clot, the coagulation cascade is attenuated.

Heparin is not a thrombolytic because it does not lyse a clot that has already formed.[1] However, it will attenuate or stop clot progression and as such will allow normal fibrinolytic substances, like plasmin, to lyse the clot at a faster rate than it is being formed. This allows heparin to be used in a wide variety of cardiovascular disorders including: deep venous thrombosis, pulmonary embolus, unstable angina, acute myocardial infarction, and thrombotic stroke. However, in order optimally to affect outcomes with heparin usage, the right dose is needed to reach rapidly and safely the therapeutic activated partial thromboplastin time (APTT). Heparin has been given for years on a standard regimen of 5,000 units IV bolus followed by a maintainance regimen of 1,000 units per hour.[1] There is mounting evidence that this is not optimal dosing.

This article will review the pharmacokinetic and pharmacodynamic parameters of heparin that lend themselves to bodyweight-based dosing and will then present data on weight-based dosing regimens *vs* standard dosing practices.

Rational for Weight-based Dosing

Pharmacokinetics and Pharmacodynamics.—The half-life of heparin is dependant on the dose given per unit of bodyweight.[1] Intravenous boluses of 25 U/kg have a half-life of 30 minutes, boluses of 100 U/kg have a half-life of 60 minutes, and boluses of 400 U/kg have a half-life of 150 minutes.[1,2] Thus, based on the initial dose in units per kilogram of bodyweight, the half-life may vary. Unfortunately the half-life over different bolus levels is not linear but increases disproportionately as the weight-based dose is increased.[1] This is due to the the bimodal clearance of the drug between renal nonsaturable pathways and saturable metabolism via macrophages and endothelial cells.[1,2] Furthermore, the intensity of the anticoagulation effect is determined on a miligram-per-kilogram basis. Heparin is bound to a number of plasma proteins which are saturable and present in accordance with approximate body size.[1] Thus, large patients will bind more heparin leaving less readily active heparin than smaller patients per units given. Furthermore, the volumes of distribution for heparin is 40-60 mL/kg and thus, larger individuals with larger volumes of distribution will dilute a dose of heparin to a much larger extent than small patients.[2] Ultimately

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these pharmacokinetic and pharmacodynamic properties argue for weight-based dosing to allow for more predictable effects from giving heparin.

Randomized Trials.—In the first published trial assessing weight-based dosing *vs* standard dosing, patients were randomized to receive the weight-based dosing of heparin (80 U/kg bolus followed by 18 U/kg/hr constant infusion), or a standard heparin dosing format (5,000 U bolus, followed by a 1,000 U/hr constant infusion).[3] APTT levels were assessed every six hours, as is the standard, and dosage adjustments were determined by use of a standard nomogram. Patients receiving the weight-based heparin achieved therapeutic APTTs (between 1.5-2 times control) faster ($P<.01$) and 97% achieved the APTT threshold (APTT>1.5) in the first 24 hours compared with 77% in the standard dosed patients ($P<.002$). The only bleeding episode in the study occurred in a standard dose patient and recurrent thromboembolism was more frequent in the standard care group. [3]

In the second trial of standard heparin dosing *vs* a weight-based approach, patients received a 70 U/kg loading dose followed by 15 U/kg/hr continous infusion (100 U/kg load and 25 U/kg/hr continuous infusion for pulmonary emboli), or the standard 5,000 U bolus followed by 1,000 U/hr continous infusion.[4] The weight-based protocol was significantly better than standard dosing at avoiding high and low APTTs ($P<.05$ for both). Fourteen percent of patients receiving the standard protocol experienced bleeding while 10% of the weight-based patients experienced bleeding. This difference was not, however, statistically significant.[4]

A third study compared a weight-based protocol of 70 U/kg bolus followed by a 13-16 U/kg/hr continuous infusion at the physician's discretion.[5] This study demonstrated that 90% of the patients receiving weight-based dosing achieved therapeutic APTTs compared with 62% in the physician-discretion group at 24 hours ($P<.001$). The median time to achieve therapeutic APTTs was seven hours in the weight-based group while in the other group the median time was 15 hours ($P<.001$). At 48 hours 97% of patients were stabilized in the weight-based group *vs* 82% in the control group ($P<.01$). Furthermore, in this study fewer than 1% of weight-based patients needed more than five dosage adjustments to reach therapeutic levels compared with 19.3% in the control group. Final analysis in this two-day study showed the following: Weight-based: 17% were below therapeutic level, 75% at therapeutic level, and 8% above therapeutic level. Control group: 42% below, 43% in, and 15% above the therapeutic range. The comparison was significant at a $P<.01$.[5] The rapidity of therapeutic APTT levels achieved in this study is similar to that of another recently published trial.[6]

The final trial compared physician-guided treatment *vs* a heparin protocol.[7] Similarly to the other studies, this trial found that using a protocol decreased the time to therapeutic APTTs ($P=.025$) without increased risk of bleeding.[7]

Conclusions

Dosing heparin in a weight-based manner is pharmacokinetically, pharmacodynamically, and therapeutically rational.[8] It allows the physician to manage embolic problems better by decreasing the time needed to achieve therapeutic APTTs, the number of dosage adjustments required, and the physician and nursing time needed to manage heparin therapy. It does this without the risk of additional bleeding.

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Update: Raccoon Rabies Epizootic—United States, 1996

SINCE 1960, rabies has been reported more frequently in wild animals than in domestic animals in the United States. In 1995, wildlife rabies accounted for 92% of animal rabies cases reported to CDC; approximately 50% of these cases (3,964 of 7,881 total cases) were associated with raccoons.[1] This report describes the continuing spread of an epizootic of raccoon rabies in affected mid-Atlantic and northeastern states and the spread into Ohio, indicating an increasing move westward despite geographic barriers.

New York.—Rabies was first confirmed in raccoons in New York in May 1990; since then, 7851 cases of animal rabies (6637 in raccoons and 1214 in domestic and other wild animals infected with the raccoon rabies virus variant) have been confirmed from all 62 counties in the state. Since 1990, the raccoon rabies epizootic has spread steadily northward within the state at an average rate of 25 miles per year. During 1994-1995, however, a focus of raccoon rabies re-emerged in the 11 counties that were affected first by the epizootic during 1990-1991: from 1994 through 1995, the total number of raccoon rabies cases in these 11 counties increased 245% (from 40 to 138, respectively). Cases of rabies in domestic animals also have increased substantially: during 1990-1995, a total of 158 cases were confirmed in cats, and 36 cases were confirmed in dogs. Before 1990, postexposure prophylaxis (PEP) was provided to an average of <100 persons annually in New York; in comparison, during 1990-1995, approximately 10,000 persons received PEP.

North Carolina.—Rabies was first confirmed in raccoons in the northeastern part of the state during 1991, probably reflecting an extension of the mid-Atlantic raccoon rabies epizootic. During 1992, cases were confirmed in raccoons in the southeastern quadrant of the state. Both epizootic foci continued to spread, and by late 1994 and early 1995, cases were confirmed in the central section of the state. In 1995, of the 875 raccoons submitted for testing, 362 (41%) were positive for rabies, more than double the number of raccoon rabies cases reported in the state in 1994 (143 cases).

Vermont.—Rabies was first confirmed in foxes in northwestern Vermont in February 1992 and in raccoons in southwestern Vermont in June 1994. The raccoon rabies epizootic has continued to spread northward up the Champlain basin and the Connecticut River valley; in 1995, cases were detected in all 14 counties within the state. In 1995, of 685 animals tested for rabies, 179 (26%) were positive, a 20% increase from 1994. In 1995, of the 261 raccoons tested for rabies, 104 (40%) were positive; in addition, testing was positive for 31 foxes, 38 skunks, two woodchucks, one pig, one beaver, and one cat.

Rhode Island.—Rabies was first confirmed in January 1994 in raccoons in Rhode Island near the state's northern border. In 1994, animal rabies cases were reported from 23 (59%) of 39 cities and towns, and by 1995, cases had been confirmed in every city and town except for the island communities of New Shoreham and Jamestown. In 1995, of 886 animals tested for rabies, 324 (37%) were positive, an 11% increase from 1994 in the proportion of all animals testing positive. In 1995, of 345 raccoons tested for rabies, 215 (62%) were positive; in addition, testing was positive for 83 skunks, nine foxes, seven cats, four cows, and one woodchuck.

Maine.—Rabies was first confirmed in raccoons in southern Maine and in foxes in central Maine in August 1994. Subsequently, cases have been detected in both domestic and wild animals in nine (56%) of 16 counties and 77 (17%) of 456 cities and towns in the state. From 1994 through 1995, the number of animals submitted for rabies testing increased from 351 to 736, and the number of confirmed animal rabies cases increased 10-fold, from 10 to 101. In 1995, of 117 raccoons tested for rabies, 41 (35%) were positive; in addition, testing was positive for 44 skunks, seven foxes, and one dog.

Ohio.—In late May 1996, the first indigenous case of raccoon rabies in Ohio was confirmed in a racoon captured in the village of Poland in northeastern Ohio, approximately three miles west of the Pennsylvania border. In June 1996, active surveillance of dead animals found on roads and nuisance animals reported to animal-control agencies was initiated within a 10-mile radius of the index

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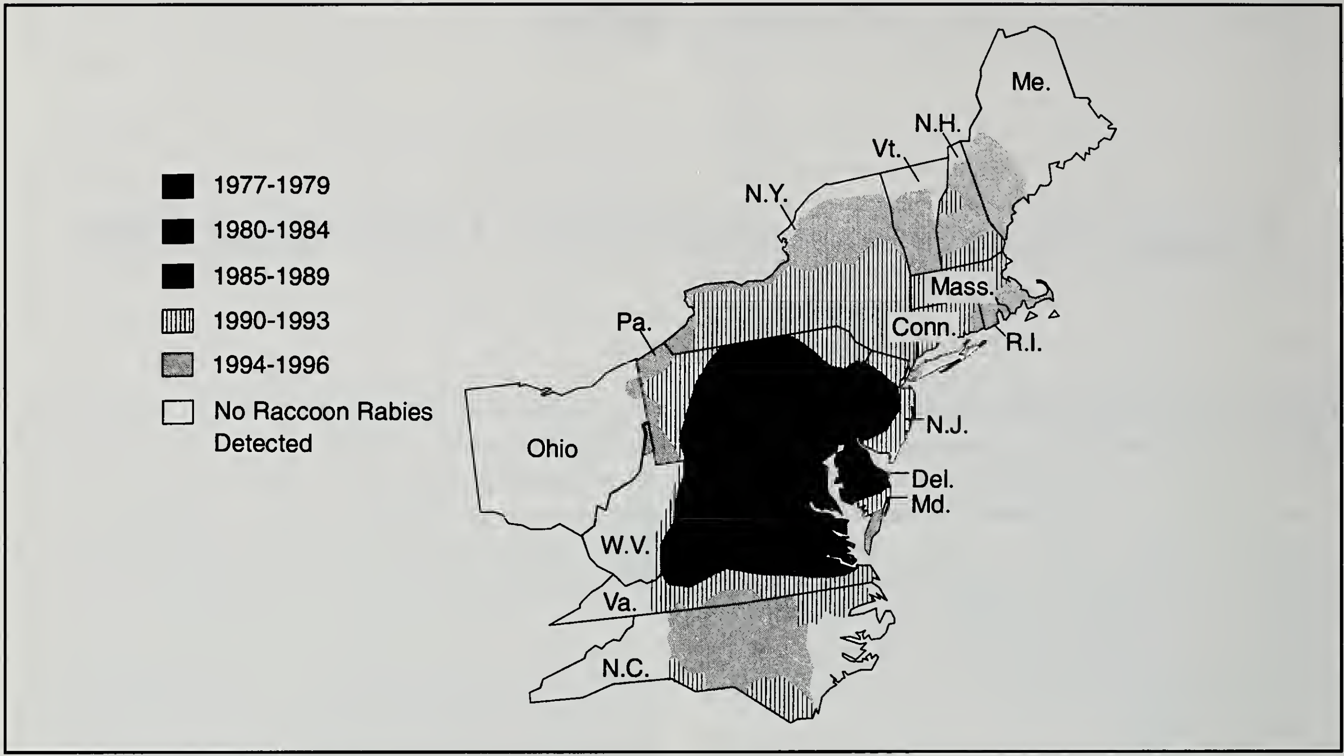

Figure 1.—Dectection of raccoon rabies, by year—United States, 1996.

case; however, no cases were confirmed among the 57 specimens tested. Active surveillance continues in this region.

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Editorial Note: The variant of rabies virus associated with raccoons has been present in the southeastern United States since the 1950s and was introduced into the mid-Atlantic region of the United States in the mid-1970s, probably as the result of translocation of animals from the southeastern United States.[2] The first such case was reported from West Virginia in 1977. Infected raccoons subsequently were reported from Virginia (1978), Maryland (1981), the District of Columbia (1982), Pennsylvania (1982), Delaware (1987), New Jersey (1989), New York (1990), Connecticut (1991), North Carolina (1991), Massachusetts (1992), New Hampshire (1992), Rhode Island (1994), Vermont (1994), Maine (1994), and Ohio (1996) (Fig. 1). During 1995, states in the mid-Atlantic and Northeast regions accounted for 89% (3510 of 3964) of the reported cases of raccoon rabies in the United States.[1] The rapidity of spread throughout the midAtlantic region may reflect the density of raccoon populations associated with abundant food supplies and denning sites in urban and suburban areas.[3] Although westward progression of the epizootic has been slowed by geographic barriers such as the Great Lakes, the Chesapeake Bay, the Potomac and Susquehanna rivers, and the Appalachian Mountains,[4] once rabies infection becomes established in racoons in the Ohio Valley, the epizootic may spread more rapidly across the Midwest.

There have been no documented human rabies cases in the United States associated with the raccoon rabies virus variant. Potential explanations for this are that first, because raccoons are large and bites to humans are likely to be recognized, rabies PEP can be administered rapidly, and second, domestic animal rabies vaccination programs have provided a barrier to infection of humans by eliminating a potential link in rabies transmission from wildlife to humans. This barrier should be maintained also through traditional public health measures such as educating the public about the importance of rabies vaccination for pets, mandatory vaccination and leash laws, and animal-control programs.

The costs associated with rabies control and prevention in the northeastern United States have increased in direct relation to the spread of the raccoon rabies epizootic; these costs primarily reflect the number of PEP regimens administered. For example, in Connecticut, the estimated number of persons to whom PEP was administered increased from 41 in 1990 to 887 during the first nine months of 1994 as the raccoon rabies epizootic spread statewide, at a median cost of $1,500 per person exposed.[5] Rabies control in two counties in New Jersey accounted for a cost increase of $1.2 million from 1988 (before the introduction of the raccoon rabies epizootic) through 1990 (the year the epizootic became established).[6]

New methods for slowing or containing the raccoon rabies epizootic are being considered in several states. For example, oral vaccination control programs using vaccinia-rabies glycoprotein recombinant vaccine contained within baits have been implemented in trials conducted in Cape May, New Jersey; Cape Cod, Massachusetts; eastern and northern New York state; and Pinellas County, Florida.[7] Implementation of such programs to prevent spread of raccoon rabies to new areas is an adjunct to traditional control methods.

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Poll Seeks Answer to Why Vaccine Isn't Used

A vaccine exists that can inoculate patients against the most common form of pneumonia. Why isn't is used more?

That question is one a University of Connecticut School of Medicine faculty member will attempt to answer after a poll of Connecticut physicians.

Mark L. Metersky, M.D., an assistant professor of medicine and a specialist in pulmonary disorders, will conduct the poll of 3,200 family practitioners and internists, statewide. He expects to have the sample in the mail this month, and results by late spring. The study is underwritten by a grant from the Albert B. Savin Vaccine Foundation, Inc., of New Canaan. The foundation is dedicated to the prevention of disease through advances in vaccine development and delivery.

A vaccine for pneumonia has been available since the 1970s, but its reputation as providing effective immunization was spotty. The vaccine was improved in the mid-1980s. Dr. Metersky believes the vaccine's initial reputation may be one factor causing physicians to disregard using it now.

Studies indicate that using the vaccine could reduce hospitalizations for pneumonia by as much as 10%. That translates into millions of dollars in Connecticut, and scores of millions of dollars nationally, in potential health-care savings annually. The first step toward realizing those savings, is in determining why physicians don't use the vaccine.

"I'm pleased to be able to perform this study," Dr. Metersky said, "and I'm grateful to the Sabin Foundation for its support. Other investigators have looked into what physicians' opinions are about the vaccine, but this study will look more broadly at issues that may prevent its usage."

Dr. Metersky believes several other factors may also be responsible for low use including:

- It may be difficult to determine if a patient has already received the vaccine or not;
- Specialist physicians may feel it is the place of the patient's primary-care physician to prescribe it;
- Physicians may just forget about a vaccine for pneumonia in the urgency of treating other, higher priority conditions before pneumonia is a problem.

The Connecticut Peer Review Organization and the American Lung Association have adopted the goal of pneumonia vaccination for 60% of people older than 65 by the year 2000. Nationally, the rate for those eligible to be vaccinated hovers around 27%. In Connecticut the rate is somewhat higher, 37%, but still too low.

Dr. Metersky said his poll should provide answers to help formulate a plan that will improve the numbers of elderly receiving vaccinations.

Jonathan Fine, M.D., a pulmonologist at Norwalk Hospital is collaborating with Dr. Metersky in conducting the research.

Clonidine for Treatment of Attention-Deficit / Hyperactivity Disorder

CLONIDINE (*Catapres,* and others), an α_2-selective adrenergic agonist marketed in the USA only for treatment of hypertension, has also been used in recent years to treat children with attention-deficit/hyperactivity disorder (ADHD).

DRUGS FOR ADHD—Treatment for ADHD is usually with a stimulant drug such as methylphenidate (*Ritalin,* and others) or dextroamphetamine (Committee on Children with Disabilities and Committee on Drugs, *Pediatrics,* August 1996; 98:301). The main problems with stimulants have been irritability, tics, anorexia, abdominal pain and insomnia. Tricyclic antidepressants have also been used, but can cause electrocardiographic changes, and sudden death has been reported in a few children who were taking desipramine (*Medical Letter* 1990; 32:53).

RATIONALE FOR CLONIDINE—Clonidine is thought to act on α-adrenergic receptors in the brain stem, decreasing sympathetic outflow from the central nervous system. Its use in the treatment of hypertension has been limited by sedation. In ADHD, clonidine has been used both alone and with methylphenidate, particularly for children with sleep disorders and in the evening when an additional dose of methylphenidate could interfere with sleep (Prince JB et al, *J Am Acad Adolesc Psychiatry* 1996; 35:599).

EFFECTIVENESS—No studies have been published on use of cicnidine in ADHD concurrently with methylphenidate. Published clinical trials of clonidine used alone have all been in small numbers of children. One placebo-controlled, double-blind trial found that seven of 10 children benefited from the drug and showed deterioration in behavior when returned to placebo (Hunt RD et al, *J Am Acad Child Psychiatry* 1985; 24:617). An open trial, also in 10 children with ADHD, found that either oral clonidine or a clonidine skin patch was as effective as methylphenidate (Hunt RD, *Psychopharmacol Bull* 1987; 23:111). A doubleblind, placebocontrolled trial in which clonidine was used to treat hyperactivity and impulsivity in eight autistic children found that the drug improved ADHD symptoms, but sedation and hypotension were troublesome (Jaselskis CA et al, *J Clin Psychopharmacol* 1992; 12:322).

Two double-blind, placebo-controlled trials have examined the effect of clonidine on ADHD symptoms in children with Tourette,s syndrome. One six-week crossover trial in 34 children compared clonidine to desipramine and placebo; hyperactivity scores improved more with desipramine than with clonidine, and more with clonidine than with placebo, but the difference between clonidine and placebo was not statistically significant (Singer HS et al, *Pediatrics* 1995; 95:74). A 12-week trial in 40 patients with Tourette's syndrome showed statistically significant improvement with clonidine in motor tics and impulsive-hyperactive behavior, but not in other measures (Leckman JF et al, *Arch Gen Psychiatry* 1991; 48:324).

ADVERSE EFFECTS—The most common adverse effects of clonidine have been irritability and sedation. Hypotension and bradycardia can occur. When the drug is stopped abruptly, rebound increases in tics and in hyperactivity have been reported. Rebound hypertension can occur in normotensive patients who discontinue clonidine abruptly. Various electrocardiographic (ECG) abnormalities have been reported in children taking clonidine with other psychoactive drugs (Kamara Chandran KS, *J Am Acad Child Adolesc Psychiatry* 1994; 33:1251). At least five unexplained sudden deaths have occurred in children who were taking or had recently taken clonidine; no causeand-effect relationship has been established, and some of the children had other possible causes of death (Popper CW, *J Child Adolesc Psychopharmacol* 1995; 5:157; Fenichel RR, *J Child Adolesc Psychopharmacol* 1995; 5:155; Swanson JM et al, *J Child Adolesc Psychopharmacol* 1995; 5:301).

CONCLUSION—Clonidine might be effective in the treatment of some children with ADHD, particularly those with sleep disturbances or tics, but controlled trials in adequate numbers of children have not been published, and its safety is worrisome.

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A Diabetologist Visits the Birthplace of Insulin

NICOLAS N. ABOURIZK, M.D.

THE entry penned by Dr. F. G. Banting and dated 16 August 1922, described a "wt 45 lbs, height 5 ft patient extremely emaciated, scarcely able to walk on account of weakness." Three days before her 15th birthday, this patient, Elizabeth Hughes, daughter of then U.S. Secretary of State Charles Evans Hughes, was close to death from diabetes and had come to Toronto to receive what the newspaper clipping's headline dubbed as the "new Toronto discovery." Her treatment consisted of daily injections of the newly discovered insulin which she continued to take for the 58 remaining years of her life. Her response to insulin was dramatic as detailed in Elizabeth's subsequent hand-written diaries and letter. "I declare you'd think it was a fairy tale.... I look entirely different everybody says.... Dr. Banting considers my progress simply miraculous," she wrote her mother from Toronto. The fairy tale is that of a daring adventure, a breakthrough, a glorious era of medical discovery, a promise to those mortally ill from insulin-dependent diabetes mellitus.

Seventy-five years ago insulin was discovered. A glimmer of hope was given to the multitude of people suffering from diabetes and to their families. As a diabetologist visiting the birthplace of insulin for the first time to participate in the October 1996 celebration of the 75th anniversary of this event, I was deeply moved. The magic of the fairy tale seemed to surround the discoverers' handwritten notes and correspondence displayed at the University of Toronto. They tell a story of perseverance and ingenuity. I could almost touch first-hand a moment in history when simple ideas, scientific rigor, personality clashes, and multidisciplinary collaboration gave birth to a unique, life-saving medication. While celebrating this anniversary in Toronto was indeed an uplifting experience, it was also an occasion to contemplate the tremendous amount that must yet be learned about diabetes 75 years later in 1996. How far from reality was the newspaper headline in 1921 that declared the insulin discovery as the "cure" for diabetes. Seventy-five years later, we know only too well that the discovery of insulin, critical as it was in providing treatment to control the disease, was by no means a cure. Incessant efforts are expended everyday in research laboratories around the world in the race for the "holy grail," the cure for diabetes. Meanwhile, this disease affects millions of people whose health-care costs constitute a significant proportion of our annual staggering health-care expenditures. Insulin discovery led to increased longevity, thus making diabetic persons prone to the ravages of its later complications. The complications, now we know, are potentially tragic and include visual loss, kidney failure, heart attacks, and amputations of feet and legs, and are directly proportional to the degree and duration of uncontrolled blood sugar levels.

This is where the objective of modern diabetes care lies: in the orchestration of multidisciplinary efforts, including teaching and reinforcing self-care skills, in order to keep the disease under tight control. While biomedical scientists struggle to understand the complex causes for diabetes and to work toward a cure, tens of millions of diabetics need to have individualized treatment regimens, a "full-court press" involving their doctors and a multidisciplinary

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NICOLAS N. ABOURIZK, M.D., F.A.C.P., Chief, Section of Endocrinology and Diabetes, Director, Diabetes Care Center and the Department of Medicine, Saint Francis Hospital and Medical Center, Hartford, CT 06105.

Reprint requests addressed to NICOLAS N. ABOURIZK, M.D., at Saint Francis Hospital and Medical Center, 114 Woodland Street, Hartford, CT. 06105.

diabetes team aiming at tight blood sugar control, good quality of life, and avoidance of dreadful and costly complications. Because of those complications (eyes, kidney, heart, nerve, feet) diabetes is currently one of the most costly of all diseases. And the lesson for our health-care system is clear: a preventive team approach, including diabetes education, will result, functionally, in healthier diabetic individuals and, for society, in a decrease in health-care costs.

Historical events tend to have their own recurring patterns. The multidisciplinary research team spirit that brought about the glorious moment of insulin's birth in the early 20th century, to a large extent prefigured the role of the multidisciplinary team in caring for diabetic persons at the end of the century. The 1921 team of discovery included a scientist, a surgeon, a medical student, and a chemist. The modern team comprises a physician, a nurse educator, a dietitian, a foot specialist, an ophthalmologist, and others including the patients themselves. The knowledge accumulated more recently about the role of tight blood sugar control in averting the ravages of diabetes makes us ponder: How important it is for members of the health-care system to realize that the preventive educational approach pays dividends in diabetes; how important it is for the legislature to mandate the availability of diabetes education to all; how important it is for all of us to promote and seek preventive approaches to diabetes; how important it is for patients to be enabled to participate actively in their custom-made regimens; and, how important it is for physicians to promulgate the principles of tight control and to advocate and provide preventive education?

In the 75th year of the insulin era, diabetes is more prevalent and more challenging than ever. The fairy tale of insulin bringing about recovery in those who were close to death is tempered now by the fact that we now know it was no cure. It is time to make diabetes education accessible and affordable to all diabetics and their familites, a way for maintaining diabetes under control. Those millions of people suffering from diabetes should have access to comprehensive diabetes education and management. They should remain as healthy as possible as we all await a miraculous cure.

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HIV Confidentiality and Medical Records

STATE OF CONNECTICUT DEPARTMENT OF PUBLIC HEALTH

RESEARCH has shown that treatment of an HIV-positive pregnant women and her newborn can reduce the transmission of the virus to the baby. Consequently, there has been new emphasis on the importance of HIV counseling and voluntary testing of pregnant women. The Connecticut legislature enacted a law that requires obstetricians and gynecologists to advise their prenatal patients about HIV testing. These events have raised the following questions about HIV confidential information and its inclusion in the medical record.

Should confidential HIV information be included in the medical records of pregnant women and their newborns?

Yes. The state confidentiality law allows the inclusion of HIV test results and counseling information in the medical charts of pregnant women and their newborns. Moreover, there are important reasons to have the results in the chart. State law requires that the provider discuss the availability of an HIV test with each pregnant woman, therefore it is important to document that this has occurred in the medical record.

Now that HIV counseling and voluntary testing has become part of the standard of care for pregnant women, a complete medical record is very important.

Treatment of HIV-positive pregnant women and their newborns with Zidovudine (AZT) has been demonstrated in a clinical trial (ACTG 076) to reduce transmission to the newborn by 67%. The protocol for the 076 trial requires ZDV administration to the mother during pregnancy and delivery and for the baby for six weeks after birth. Therefore, a rapid and smooth transfer of information about counseling, testing, and treatment of the patient is a necessary part of the medical record. HIV-related information from the mother's prenatal chart can and should be included in the delivery room record and the pediatric record of the newborn. It is the best way to ensure that the protocols for treatment are offered, documented, and appropriately followed.

Do I need written permission from the mother to put the HIV test results in the pediatric chart?

No. The state HIV confidentiality law states that knowledge of HIV-related information can be shared with other providers without the specific consent of the patient when the information is necessary for appropriate care or treatment of the protected individual or a child of that individual.

Can information be disclosed to insurance providers?

Yes. Information from medical records is disclosable to insurance providers for payment without the consent of the patient. *Insurers cannot use the information for underwriting purposes resulting in cancellation or non-renewal of a policy.* Release of such information to insurers should be documented in the record.

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Guest Editorials

Hard Experience Shows Necessity of Regulating Managed Health Care

FORUM Submitted to the *New Haven Register* by
Tim Norbeck, CSMS Executive Director

In a recent Sunday Forum column, Frank J. Johnson of the Manufacturing Alliance of Connecticut stated the case for allowing managed care to operate in a "free market system ... without government intervention."*(see next article)*

Allowing the "free market ... to craft its own solutions" has led us to the present slippery slope where patients have become mere bystanders in their own health care decisions while their physicians and other caregivers are forced to run a formidable, intimidating, and time-consuming gantlet in order to use their best professional judgment and skills.

The free market approach has reduced our health care system to one based almost entirely on price, where medical judgment can be subverted. When it comes to their health care, particularly in urgent situations, patients are vulnerable and need care they can trust.

In fairness to business, it must be stated that market forces aren't all bad. After all, they have given us the benefits of competition and cost-effective production. But left entirely on their own, unfettered and unregulated, they have also presented society with the plagues of dangerous products, child labor, and occupational perils like black lung disease.

If managed care is best left on its own without external regulations, and if HMOs do respond to patient needs, as they claim, why then was it necessary for Congress and state legislatures to force them to grant new mothers at least two days of hospitalization following childbirth?

Why does it take action by legislative bodies to ban gag clauses so that physicians and other caregivers can speak frankly to patients about treatment options?

Why did legislators have to become involved when some insurers ordered that mastectomies be performed on an outpatient basis? Is there a male insurance CEO in the entire country who would permit such an atrocity on his own spouse? When an actuarial firm can actually determine that radical breast surgery can be done on an outpatient basis without regard for its painful physiological and psychological effects on a woman, we truly are in an unregulated race to the bottom.

An understandably frustrated Connecticut cancer patient recently responded to the medical director of her HMO, which had initially denied authorizing a hospital stay for the removal of both her breasts: "If it was you having your testicles removed, you would be in the hospital for a week having your pillow fluffed and your every need attended to." Amen.

The only reason some plans capitulated to patient demands was that their position was so untenable as to bring down the wrath of legislators. But recently an Illinois HMO has announced that its goal for length-of-stay for heart bypass surgery is three days—a greater than 60% decrease in the average hospital stay for bypass surgery. A medical miracle? No, a recommendation from the HMO's actuaries.

What new cost-savings schemes are now on the drawing board? What's next for patients? Are patients and their caregivers going to be forced to fight the insurers disease by disease, procedure by procedure, and body part by body part? Or is it time for sensible controls?

Appropriate, common-sense care does not necessarily involve additional costs. After the length of maternity stays in Connecticut was increased by legislative mandate, officials from one hospital reported seeing fewer cases of jaundice and a 66% reduction in the number of infants readmitted due to dehydration or loss of weight.

Can't there be a fair balance achieved between cost-effective and compassionate care? The for-profit, managed care industry has an indisputable fiduciary responsibility to maximize profits for its shareholders.

By what other means, short of regulations, can we be certain that that fiduciary responsibility will not place "cost-effective" considerations ahead of needed and compassionate care?

We must establish a margin of safety for the patient and alleviate growing public anxiety. The expertise of physicians and other caregivers must never be subverted by unlicensed medical commissars disguised as managed care executives. Even Johnson acknowledged that some reforms need to be made. But if not through regulation, pray tell, how will they be enforced?

Obviously not all managed care plans and insurers are alike. Some are clearly better than others. Those that are accountable and responsible to their patient subscribers and accommodating to the caregivers who treat patients shouldn't have any problems with such regulations.

But the other, not so magnanimous, plans will finally have to meet minimal standards of disclosure, quality and fairness. What's wrong with that?

Timothy B. Norbeck
Executive Director, CSMS

Reprinted from the New Haven Register, Sunday, 19 January 1997.

Free Market System Should Be Left to Work Out Solutions To Health Care

FORUM Submitted to the *New Haven Register*
by Frank J. Johnson, Executive Director of
Manufacturing Alliance of Connecticut

Managed care reform is a timely topic in Connecticut and in Washington.

The Manufacturing Alliance of Connecticut Inc. understands the concerns being expressed, but we remain extremely wary of any overreaction that might dilute the benefits of managed care. Health care costs are the highest employee-benefit expense for employers, and Connecticut costs are still among the highest in the nation. The introduction of managed care has helped to stem the increases.

The KPMG accounting firm recently released figures that showed the health care costs increased 0.5% from spring 1995 to spring 1996. This compares to increases averaging 4% the past four years and 13.2% in 1988-1992.

According to the survey, "This (0.5% increase) is due to a steady rise in enrollment in preferred provider organization, HMO and point of service plans. The current slowdown results from a fundamental reorganization of the health care industry, not a government or voluntary price freeze."

The Manufacturing Alliance of Connecticut concludes that the free market system of competition works, and works best without government intervention.

The Manufacturing Alliance of Connecticut represents 250 Connecticut manufacturers that collectively employ about 45,000 manufacturing workers. Having surveyed our members, we truly understand the managed care system and its strengths and weaknesses.

Reforms may be needed, but wholesale regulation will destroy the gains of recent years. Connecticut's history of hospital regulation serves to highlight the dangers.

Regulated health care produced excess capacities, inefficiencies and huge costs. The legislature finally declared hospital regulation a failure. Yet, before the fallout from this failed policy is completely known, many are urging that we embark upon a new voyage on the uncharted sea of regulations. Those changes would strip away the benefits of managed care and dilute the progress that has been made in keeping manufacturing jobs in Connecticut hence we remain fearful that the myriad benefits of managed care will be lost by instituting sweeping reforms where a little fine-tuning will suffice.

The introduction of managed care has helped stem rising costs and brought health care costs under the control of those paying the bills while helping companies continue to provide coverage and creating market opportunities that solve problems, and competition which drives prices down and service up. As with any market, those medical providers criticizing managed care plans are free to offer competing arrangements that address their concerns. If the alternatives offer quality and cost efficiency they win succeed.

The overregulation of health care will dilute the savings, drive prices up for employees and employers and increase state and local cost for government employee benefits, while resulting in fewer employers being able to provide coverage for employees and dependents. Ironically, stifle new concepts the market.

Remember, Connecticut already has a very high number of mandates and even with managed care, Connecticut companies pay far higher insurance costs than those in other states. Most employers have the same coverage under managed care as do their employees. When disputes arise, there are complaint resolution procedures in place both within manufacturing companies and with all insurance companies providing managed care plans.

Today the cost of medical insurance is not borne solely by employers. Employees pay an ever-increasing share—both through direct contributions and reduced wages. In the global marketplace where Connecticut employers must compete, excess employee costs created by the state will ultimately fall on the employee. The notion that insurance companies will provide more services and endure more costly red tape without passing these costs onto the premium payer is as mythical as a free lunch.

Wholesale regulation will increase costs, drive up premiums stifle wage growth, reduce take-home pay, increase the number of people without health insurance and cost the state high-paying jobs. As the cost of insurance increases, the number of people without insurance will also increase.

This does not mean that Manufacturing Alliance of Connecticut members believe managed care to be the perfect system. We believe that where abuses are found and documented, narrowly crafted legislation may be appropriate.

In general, however, the free market should be left to craft its own solutions. The issue of health care cannot be divorced from the question of cost. Legislators must give careful consideration to the cost impact of any proposals. No matter how perfect any system may be it is useless if it is not affordable.

Frank J. Johnson
Executive Director
of Manufacturing Alliance of Connecticut,
1525 Hamilton Avenue, Waterbury, 06706.

Reprinted from the *New Haven Register*, Sunday, 29 December 1996.

Commentary

An Open Letter to Specialists

In the good old days when life was much simpler everybody knew that PCP meant Angel Dust. These days when managed-cost organizations (MCOs) are proliferating like rabbits—oops, I almost said cockroaches, the letters PCP have landed on the heads of primary care physicians like a ton of bricks. Caught between the rules and regulations of the MCOs and the ever increasing demands of patients, life for PCPs has become a bed of thorns. I am writing this to you with the hope that we can work together to make things easier for all of us and our patients.

All MCOs have provider manuals dubbed "the Bibles" by my staff. If we do not follow the commandments in them to the letter we end up in a tangled mess that even Moses couldn't undo. Please have your staff read the latest manuals and follow the rules just as mine have to do. Sending the patient off to the PCP for a referral is the easy way out, but not always the correct procedure. Many referrals are now filed electronically and sometimes your office has to call the MCO directly for certain approvals.

The staff in PCP offices can spend as long as 20 minutes on a single referral after being switched from one moronic associate to another before getting an approval. One has to be a saint to have to go through this frustrating experience several times a day and still maintain one's equanimity.

In the old days we usually got a letter or at least a phone call from a specialist advising us on what was being planned for our patient. Quite often these days the patient shows up in the office asking for a referral for a procedure that has been scheduled for the next day. Unfortunately, the patient is as clueless as I am as to what is being done, so my secretary has to make time to call your office to find out what your plans are.

When a specialist refers a patient to another specialist without going through the PCP the MCO very often refuses to pay the second specialist. I had a patient show up in my office with a letter from a collection agency as the second specialist had put her in collection. The end result of this was that I had to make several phone calls and write a letter of explanation before the bill was paid. This was a colossal waste of my time because a wrong procedure was followed.

We are all in this quagmire together and the more we struggle against the rules the deeper we sink. PCPs are dumped on enough by MCOs. The ultimate goal has to be good patient care so let's try to make life easier for all of us or you may drive PCPs to sniff PCP!

Lalitha Manoharan, M.D.
Stamford

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50 Years Ago
From *The Connecticut State Medical Journal*
February 1947

The Arnold C. Klebs Library Arrives at Yale

Physicians in Connecticut will learn with interest of the arrival at Yale of the great library of the eminent Swiss medical historian and humanist, Arnold C. Klebs. Receipt of the Klebs collection marks the fulfillment of the plan originally conceived by the late Dr. Harvey Cushing for establishing at Yale a center to promote the study of the history of medicine and science. Although not a Yale man, Dr. Klebs was a life long friend of Dr. Cushing who, shortly before his death, induced Klebs to deed title of his library to Yale University so that their books might one day be united. Cushing at the same time persuaded Dr. John Fulton also to give his collection on the history of physiology to the Medical Library. Others meanwhile have followed suit with the result that we now have in Connecticut one of the most useful and valuable libraries of the history of medicine in the world. To mark the arrival of the Klebs gift, the Historical Library has arranged an exhibit during January and February in which some of the more important holdings have been placed on display.

Arnold Klebs was the son of the well known Swiss bacteriologist, Edwin Klebs, who isolated the diphtheria bacillus prior to Loeffler (hence the "Klebs-Loeffler bacillus") and who was likewise the first to prove experimentally that the tubercle bacillus was the causal agent in tuberculosis (1877).* Edwin Klebs wrote some seventy papers on the etiology, pathology, and therapeutic management of tuberculosis, and the originals of all these papers have been carefully preserved, along with a considerable proportion of the books he had gathered together.

Following in his father's footsteps Arnold Kelbs devoted his early years of practice to tuberculosis. He came to this country in 1896 and after spending some time with Osler at John Hopkins began to practise as a tuberculosis specialist in Chicago. In 1909 he edited a large monograph on tuberculosis which was well received and generally regarded as the most authoritative text in English. Because of his interest in tuberculosis, Klebs soon turned his attention to the early literature of this subject and in the course of the next forty years he brought together a collection of more than two thousand separate items on the history of disease.

He was also interested in the history of inoculation for smallpox and, as with the tuberculosis literature, he amassed a large proportion of the ephemeral inoculation pamphlets, this section of his library running to more than a thousand items. The early plague tracts claimed his attention, and he likewise had a large collection of early herbals on which subject he had become an eminent authority.

Dr. Klebs' principal contribution to scholarship lay in the field of fifteenth-century medicine and science. He had intended to publish a large-scale bibliography of fifteenth-century medicine and science and in preparation for this vast undertaking, which had been sponsored in part by the New York Academy of Medicine, he issued in 1938 a short-title list, *Incunabula scientifica et medica.* Unfortunately when his death came in March 1943, this larger work had not been entirely completed. The manuscript works have come to Yale with his gift, and the Historical Library hopes at some future time to publish his full length bibliography.

Recognizing their responsibility to the profession in the state and elsewhere in the country, those entrusted with the administration of the Library are making its holdings freely available to all physicians. Any member of the State Society in good standing may use the Library, and books may be borrowed by arrangement with the hospital with which the physician is associated, or through libraries by means of inter-library loan.

Reprinted from the *Connecticut State Medical Journal*, February 1947.

*This is an error. Klebs experimentally transmitted bovine tuberculosis by feeding milk from an infected cow to a calf in 1873. It was Robert Koch who isolated the tubercle baccillus in 1882, and proved it to be the causative agent of tuberculosis.—Ed.

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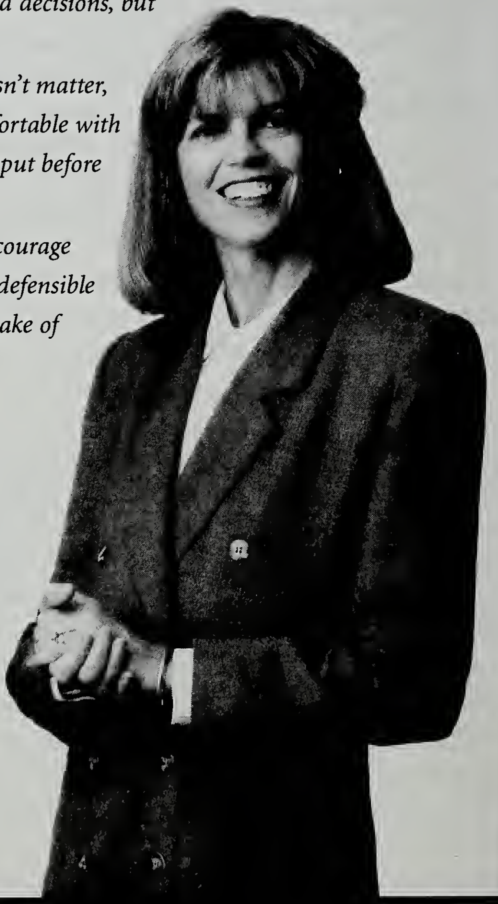
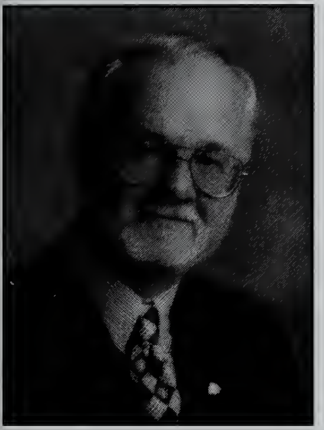


Robin McNiff
Senior Claim Representative

CMIC—Jewel in the Crown



It has always been difficult to get physicians to agree on any one issue. If there are five physicians in a room there are six opinions: each individual's and the group's. When the Connecticut Medical Insurance Company (CMIC) was founded over 12 years ago, however, there was a unanimous opinion that something needed to be done to stabilize soaring malpractice insurance costs. Connecticut physicians were up to that challenge when they formed their own professional liability insurance company, CMIC.

At the time, malpractice premiums were increasing 30% or more per year. Insurance companies were leaving the Connecticut market. In the early 70s, nearly all physicians had joined the one predominant company, Aetna, in a CSMS-sponsored program that lasted a decade. This stabilized premiums for a while, but once a company has a near monopoly, it could repeatedly raise premiums. This was proved true again with the CNA program in the early 80s.

In this volatile and unstable market, CSMS organized enough Connecticut physicians to form the infant CMIC in 1984. Then CSMS president Joseph Sadowski, a Hartford neurosurgeon, personally vouched for a substantial loan to form the company until help and support could come from a sister state society; and then from the first 700 physician/investors in CMIC, who in three *weeks* contributed the first five million dollars in capital for the start-up. The courage and foresight of these Connecticut doctors should not be underestimated. Once the 100% physician-owned and physician-directed company was formed, premiums immediately stabilized for several reasons. CMIC vigorously fought every nonmeritorious malpractice suit, most especially frivolous nuisance suits, and a program of risk management was instituted. Physicians were educated on how to avoid problem areas and give better care. In the past, malpractice carriers didn't seem to care how many lawsuits were instituted or settled.

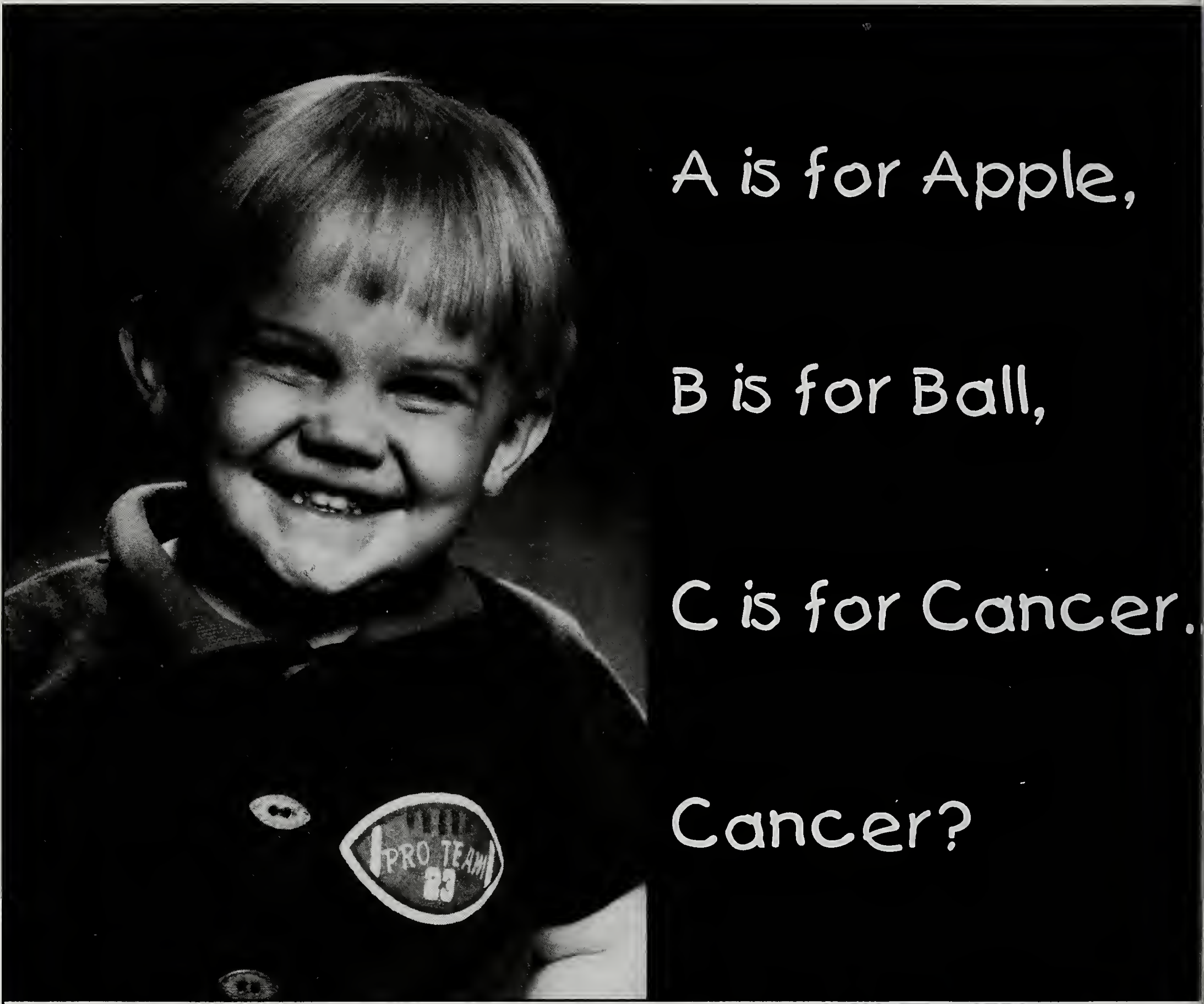
CMIC changed all of this. Vigorous programs were put in place to help doctors and their office staffs avoid malpractice. Support programs were created for defendants and their families. The preeminence of CMIC in Connecticut has stabilized and prevented other companies from capriciously raising premiums. As the fledging CMIC grew, a second malpractice crisis started to develop, as malpractice costs began again to soar out of control.

The leadership of CSMS and CMIC worked together to effect meaningful tort reform in 1986. Thus, as the decade of the 80s came to a close, malpractice premiums actually began to decrease. This ushered in an unprecedented period of premium stability enjoyed by Connecticut physicians. In 1997 CMIC announced *no* premium increase for the sixth time in eight years.

The Connecticut Medical Insurance Company continues to offer excellent service and support to Connecticut physicians. All-physician committees oversee claims, underwriting, and risk management, and your county medical associations provide peer review committees. Our malpractice liability company is a striking example of the power of unity among the state's doctors. That solidarity has helped us immeasurably in the past and will be needed even more in the future. Connecticut physicians need to continue to unite behind CMIC especially when large out-of-state companies try to enter the Connecticut market and fragment physicians. If this fragmentation occurs, we will once again run the risk of returning to the past volatile and unstable malpractice market.

CMIC shines as an outstanding gem in medicine's crown here in Connecticut, and continues to merit our support.

Michael M. Deren, M.D.
President



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The Undiscovered Country

ROBERT U. MASSEY, M.D.

IN conversations with residents and geriatric fellows, the matter of end-of-life decision making, living wills, and durable power of attorney is certain to come up, as it should. Always they feel an uneasiness, not so much about death, but rather how to talk about it with patients. Understandable because most of these young physicians have never actually seen someone die, never witnessed the hours and minutes before death, never talked at length with patients, young or old, who know their disease is fatal and that they are dying. Many 30-year olds, in fact, have four living grandparents, or if one has died, that death took place in Florida or Iowa, miles away. Death is like Timbuktu; they know it exists but they've never been there.

As a matter of fact, talking with the dying about death is something few of us have done; so how are we to talk with healthy patients about their desires at the end of life? As professionals, can we tell them much more than they already know about this experience that we all will one day face, how it is likely to happen, what will be done to them when they are helpless, and where? That most of us want this kind of information was dramatically demonstrated by the great popularity of Dr. Sherwin Nuland's best seller, *How We Die.*

The first physician to attempt a study of this matter, using Pierre Louis's "Numerical System," was William Osler. He wrote of his study, done in the Johns Hopkins Hospital, recounting his findings in his Ingersoll lecture, *Science and Immortality* , in 1904:

> I have careful records of about five hundred death-beds, studied particularly with reference to the modes of death and sensations of the dying. The latter alone concerns us here, Ninety suffered bodily pain or distress of one sort or another, eleven showed apprehension, two positive terror, one expressed spiritual exaltation, one bitter remorse. The great majority gave no sign one way or the other; like their birth, their death was a sleep and a forgetting. The Preacher was right: in this matter man hath no preëminence over the beast,—as the one dieth so dieth the other.

Surprisingly only four or five other studies of this kind have been done since, the most recent being by Joan Lynn et al that appeared in *Annals of Internal Medicine* last month (15 January 1997: 126: 97-106). This study involved 9,105 seriously ill patients in five teaching hospitals of whom 4,124 died. In the last three days, 55% were conscious, 40% had severe pain, and 63% "had difficulty tolerating physical or emotional symptoms." Twenty-five percent had a ventilator, 40% a feeding tube. Over half had indicated a desire for comfort care, and 10% were treated contrary to their preferences. The authors conclude with a carefully worded comment:

> It is likely that quality of care at the end of life will have to be routinely measured and that the public and other health care purchasers will have to demand and pay for adequate performance before lasting and sustained improvements are possible (p.105).

Arthur W. Feinberg in an editorial in this same issue suggests separate hospital units for dying patients (Hospice units?), or "keep the dying patient out of the high-technology milieu of the hospital," and he notes that " Our society has not yet accepted the inevitability of death."

I would suggest that we had a better time of it in 1904 than now; from my discussions with Hospice nurses I know that pain and distress, physical, mental, and spiritual, can be controlled over 90% of the time by skillful, intelligent, and empathic care, even beating Osler's experience of 75% whose "death was a sleep and a forgetting," not the wild death in the ICU!

Dr. Bernard Lown in his recent book *The Lost Art of Healing* (Houghton Mifflin, New York, 1996) wastes no words:

> Reflecting on a life of dealing with death and dying, I am persuaded that death's anguish is, in no small measure, man made. It is a product of Western culture, which denies death its due and foolishly allocates mammoth resources to prolong the tormenting act of dying.... But it is difficult to see any change.... the economics of dying are too great, and doctors too deeply fixated on proving their power over death, for the system to yield....
>
> Any meliorization of the problem has to face up to the fact that the contempory hospital functions best when the patients are infantilized and disempowered.... hospitals [must be] decoupled from the act of dying (pp. 288-9).

Rather than demanding that we fix this "unintended effect" of our good intentions, half of our patients are now asking us to become their willing executioners to save them from a demeaning fate far worse than death! What a shame!

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

This Month's Reading in Review

TIMOTHY B. NORBECK

A new nationally representative study of Medicare patients has found that having a long-standing tie with a physician was associated with lower costs of inpatient and outpatient care and a lower risk of hospitalization.... Published in the most recent issue of the *American Journal of Public Health*, the study found that 55.3% of Medicare beneficiaries surveyed had ties going back more than five years with their physician, while 35.8% had ties gong back 10 or more years.

Politics and Policy (16 January 1997)

"Be skeptical about HMO satisfaction surveys," cautions Michael Hays, president of the National Research Corporation—a market research company in Lincoln, Nebraska.... "Polling techniques vary widely among HMOs, so results are not comparable ... and some can be used to improve an HMO's scores."... For example, phone surveys yield more positive results than mail surveys, he concludes, and surveys with lower responses often show happier respondents.... Also, surveys do not include members who have recently quit HMOs.

Bottom Line (1 November 1996)

"The trust in managed care is really deteriorating rapidly. We need some way of assuring the public that plans can be trusted, and we need it quickly, or everything we've done can go down the tubes."

Paul Ellwood, Jr., M.D., champion of managed care, in the *New York Times* (8 December 1997)

"It's not that Columbia takes actions to avoid uninsured patients; it just buys hospitals where they're not likely to walk in the door."

Johns Hopkins' Gerald Anderson on hospital-chain giant Columbia/HCA's purchasing strategy.
American Health Line (10 January 1997)

Thank you very little: Sign posted in a loan company office: "Ask about our plans for owning your home."

San Francisco Chronicle (12 January 1997)

"What makes a free market work, of course, is the sovereign consumer. If you don't like McDonald's, you can take your business to Burger King. Customers of health insurance, however, are anything but sovereign consumers. For one thing, ordinary people lack the specialized knowledge to shop for medical care. That is why we entrust our care to doctors."

Columnist Robert Kuttner in the *Boston Globe* (30 December 1996)

The Deal from Hell: Andre-Francois Raffray, then 46, a lawyer from Arles, France, thought he had made the deal of a lifetime.... In 1965, he signed a contract giving Jeanne Calment, then 90, $500 a month for life on the condition that she leave him her house when she died.... Attorney Raffray died last month at the age 77, a few weeks after Ms. Calment became the world's oldest known living person (she turned 121 in February).... He ended up paying her over $180,000 in the deal; the house is worth $60,000.

Parade Magazine (29 December 1996)

In Plymouth, Massachusetts, Anthony Varrasso was summoned for jury duty.... No big deal except that Anthony was only three years old.... His mother told officials that her son was a bit young to be deciding cases, but they insisted that he was 18—that's what it said on the census form.... Plymouth has called dead people, pets, and even a building for jury duty because of incorrect census information.

Forbes (13 January 1997)

Only in America: A Virginia prison inmate, who decided it was his own fault he got drunk enough to commit the series of crimes that landed him in jail, decided to sue himself—for violating his own religious beliefs against drinking. He asked the state to pay him the $5 million he sought. (The courts dismissed the suit).

U.S. News & World Report (15 November 1996)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

"Hospitalists"

To the Editor: Recently it was suggested that the thought of differentiating our physician workforce into hospital-based (hospitalists) and nonhospital-based would have "seemed sacrilegious merely a few years ago."[1]

But the truth is that the though of such a division, sacrilegious or not, has been on some physicians' minds for much longer than that.

Over the past several years, a growing number of general internists and family practitioners have come to realize that the unique knowledge and expertise required to take care of inpatients have transformed hospital practice into a realm of its own. Consequently, some physicians believe that inpatient medicine should be limited to doctors dedicated solely to hospital practice.[2,3] This has already been studied in intensive care units, where it has been shown that clinical outcomes were better when patients admitted there were cared for by critical care specialists as compared to "primary admitting physicians."[4] Another study showed that patients with myocardial infarctions had better survival rates when treated by cardiologists rather than by primary care doctors.[5]

Perhaps interest in hospital-based and nonhospital-based physicians was accelerated by pressure from managed care[6] but, bifurcating the physician workforce in this fashion seems logical and may become the *modus operandi*, as it was in other industrialized countries such as Japan,[7] Australia,[8] and the United Kingdom.[9]

The possible loss of continuity with patients is a serious concern for many personal physicians; however, this could be minimized if they maintained close contact with their consultants and made courtesy calls when necessary.

When it comes to caring for hospitalized patients, economic pressures to control health-care costs will place ever greater value on the skill and expertise and the ability of hospital-based physicians to react quickly. It is likely that future studies will show that such physicians can get patients in and out—not only of the intensive care unit—but, of all areas of the hospital, quicker and cheaper and with better outcomes than physicians who divide their practices between offices and hospitals.

The rapidly increasing complexity of hospital care merits the use of hospitalists. Such physicians may become ethical and legal, as well as technical necessities. Hospitalists will allow family practitioners and general internists more time to be in their offices, allowing them to increase their efficiency and to be more available to their patients. For personal physicians house calls may become common again. Imagine what that would do to improve the image of all doctors.

Ironically, the use of "hospitalists," if done properly, instead of further fragmenting medical care, as some might think, might just be our best opportunity to reintroduce humanism and common sense back into our profession. That alone would be reason enough to give it a try.

Edward J. Volpintesta, M.D.
Bethel

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The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

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Busy family practice in Stamford seeks board certified family practitioner. Full- or part-time in pleasant, well staffed office. Full, on site laboratory. Good location. Serving private, medicare, and HMO patients. Hours, salary negotiable. Please call or send CV to: Alan Falkoff, M.D., 838 High Ridge Rd., Stamford, CT 06905, telephone (203) 322-7070.

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Western Connecticut—1-1/2 hours from New York City. Our well established four-person primary-care practice emphasizes patient care, teaching and quality of life. Need to replace retiring partner with a BC internist who will also participate in the Yale Primary Care teaching program. Our town was voted "Best Place to Live" by *Connecticut Magazine*. Please respond to CSMS c/o IM/SM.

Internists, family physicians, or psychiatrists wanted for inpatient substance-abuse treatment facility in Newtown, Connecticut. Twenty-three beautiful acres, top staff, excellent working conditions, and benefits. Send resume to: Executive Director, Cornerstone of Eagle Hill, 32 Alberts Hill Rd., Newtown, CT 06482, telephone (800) 233-9999, ext. 3101.

Gaylord Hospital is currently recruiting a full-time BC/BE internist to work in the medical-surgical division starting 1 July 1997. Gaylord Hospital is a 109-bed, not-for-profit hospital accredited by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and the Commission on the Accreditation of Rehabilitation Facilities (CARF). It has a full-time medical staff consisting of physiatrists, internists, and physician assistants, supported by consultants dedicated to the rehabilitation of patients with traumatic brain injuries, spinal cord injuries, strokes, and general debility from prolonged acute medical conditions. The hospital's outpatient department serves both patients who have been inpatients at the hospital as well as patients referred by physicians and hospitals for outpatient evaluation and therapy. The medical staff functions in a rehabilitation team structure, supported by full-time physical therapists, occupational therapists, speech pathologists, audiologists, psychologists, social workers, respiratory therapists, vocational counselors, and, of course, a large nursing staff dedicated to the specialty of rehabilitation nursing. Please contact Dr. Jerrold Kaplan, Medical Director, at (203) 284-2702 for more details about this rewarding position.

New Milford Internal Medicine Associates is seeking a highly qualified primary-care internist with or without subspecialty to join us as soon as possible. We are a three-person group consisting of a gastroenterologist, hematologist/oncologist, and a general internist. All members are board certified. The group cross-covers with two additional general internists located in separate offices. In adding new members to the group, we rely on a combination of subsidies and income guarantees to assure adequate cash flow during the first months of practice. We are well positioned to assure the success of new physicians in our busy, highly visible and well-established practice. At some later date we intend to recruit another similarly qualified individual for a total of five physicians in our office and seven in the coverage group. We believe that our organization provides the best opportunity to maintain control of one's professional and personal life while optimizing financial rewards. Interested physicians should contact: Morris L. Clark, M.D., Booth House, 11 Grove St., New Milford, CT 06776, telephone (860) 354-5511, fax (860) 350-3122.

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PULMONARY MEDICINE

Seeking full-time BC/BE pulmonologist to join a rapidly growing pulmonary practice in southeastern Connecticut. Excellent opportunity leading to full partnership. Please send CV to: CSMS c/o PM/NL.

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Available March 1997. Licensed in Virginia, Connecticut, and New York (in process). Passed National Boards. American Board eligible. M.D. at Dow Medical College/Civil Hospital, Karachi, Pakistan. Internship and residency at Kingsbrook Jewish Medical Center, Brooklyn. Additional training in critical care/anesthesia at Brookdale Hospital, Brooklyn. Would like to join a group or associates practice, preferably with a hospital affiliation. Please respond to: Syed Hussain, Z. M.D., 9123 Seaview Ave., Brooklyn, NY 11236, telephone (718) 251-7237.

Available August 1997. Licensed in California. Passed National Boards. American Board eligible. M.D. at Medical School of Saigon, Vietnam. Internship and residency at Kingsbrook Jewish Medical Center, Brooklyn. Would like to join an institutional practice in a medium-sized community. Please respond to: Cam Nguyen, M.D., 8 Taylor Dr., Cos Cob, CT 06807, telephone (203) 869-6109.

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Connecticut licensed, board certified experienced pediatrician, familiar with medical Spanish, seeking out patient/ambulatory practice, flexible schedule part-time position or locum tenens work (one day to several weeks) to suit your need. Please respond to: Usha Reddy, M.D., F.A.A.P., 638 Fern St., West Hartford, CT 06107, telephone (860) 521-5285.

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Connecticut State Medical Society

✪ *Distinguished Citizen Award* ✪

Nomination Form

To be completed and returned to:

Connecticut State Medical Society
Committee on Public Affairs
160 St. Ronan Street
New Haven, CT 065111

Please complete both sides of this nomination form. All nominees must meet the following criteria, as approved by the Connecticut State Medical Society Council:

- Be A Connecticut Citizen
- Contribute to the Quality of Life
- Make a Significant Humanitarian Contribution
- Be Nominated By a CSMS Physician Member

ALL NOMINATIONS MUST BE SUBMITTED TO CSMS BY FEBRUARY 14, 1997.

(please print or type)

✪ Nominee Information

Name ______________________________

Address (home) ______________________________

City ______________ Zip ______________ Telephone ______________

In your own words, please describe (in 200 words or less) why this nominee should be considered for the Connecticut State Medical Society's Distinguished Citizen Award.

____

____

____

____

____

____

(cont. on back)

Nominee's Name: ______________________________

✪ Civic Contributions/Community Involvement

Please complete the following (print or type). Include all organizations which the nominee has served. If you need additional space, please duplicate this page. (Note: The CSMS may need to contact the organizations for clarification and verification.)

Name of Organization ______________________________
President or Director ______________________________

Address ______________________________

City ______________ State ______________ Zip ______________

Telephone No. ______________________________

Function of Organization (briefly describe) ______________________________

Type of Service(s) ______________________________

Year(s) of Service ______________________________

* * *

Name of Organization ______________________________
President or Director ______________________________

Address ______________________________

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Telephone No. ______________________________

Function of Organization (briefly describe) ______________________________

Type of Service(s) ______________________________

Year(s) of Service ______________________________

* * *

✪ Nomination Submitted by:

Name ______________________________

Address ______________________________

City ______________ Zip ______________

Telephone ______________ Fax ______________

Connecticut Medicine

Vol. 61, No. 3 *The Journal of the Connecticut State Medical Society* March 1997
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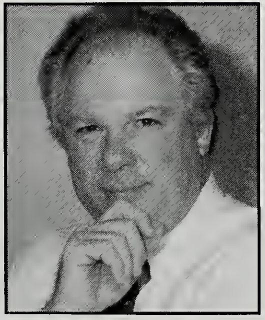

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Reduction Ventriculoplasty for the Cardiomyopathic Heart: A Case Report

SHAHRAM SALAMI, B.S., GEORGE TELLIDES, M.D., PH.D., TARIK M. RAMAHI, M.D., LYNDA ROSENFELD, M.D., WILLIAM P. BATSFORD, M.D., PETER S. MILSTEIN, M.D., AND JOHN A. ELEFTERIADES, M.D.

ABSTRACT—A 44-year-old morbidly obese and hypertensive woman had been diagnosed with idiopathic cardiomyopathy seven years previously. She was referred for consideration for heart transplantation because of progression of symptoms to class IV. Massive obesity and pulmonary hypertension were strong relative contraindications to transplantation. During outpatient evaluation, the patient developed pulmonary edema, was hospitalized, and became intensive care unit-bound and immobile. Exercise radionuclide angiocardiography revealed left ventricular ejection fraction of 17%, and left ventricular end-diastolic volume of 408 mL. A reduction ventriculoplasty procedure was performed by resection of the lateral wall of the left ventricle. The patient did very well, and was discharged on postoperative day nine. Two weeks after the procedure, exercise radionuclide angiocardiography demonstrated left ventricular ejection fraction of 30% (76% increase) and left ventricular end-diastolic volume of 293 mL (28% decrease). The patient remains in stable New York Heart Association class II, now three months postprocedure.

This initial positive experience in New England encourages continued investigation of the reduction ventriculoplasty procedure, either as a bridge or as an alternative to heart transplantation in patients with dilated cardiomyopathy.

Abbreviations Used in Text

ERNA - exercise radionuclide angiocardiography
ICU = intensive care unit
LVA = left ventricular aneurysmectomy
ICD = implantable cardioverter-defibrillator

Introduction

THE size and shape of the left ventricle are critical to cardiac performance.[1] Early studies confirmed the relevance of Laplace's law to left ventricular function.[2,3] Laplace's law states that the tension in the wall of the left ventricle is directly proportional to the intracavitary pressure multiplied by the radius of the left ventricle. Hence, a dilated heart operates at a great mechanical disadvantage compared to a normal heart.

In an earlier investigation, we demonstrated that the size and shape of the left ventricle could be altered favorably by surgical intervention in patents with ventricular dilatation due to postinfarction left ventricular aneurysm.[4] We demonstrated both functional and morphological improvement in a group of 75 patients undergoing linear left ventricular aneursymectomy (LVA). In these patients, we found a dramatic improvement in congestive heart failure class as well as substantial objective increases in ejection fraction following surgery. Thus, we concluded that LVA was clinically effective and objectively improved left ventricular morphology and function.

Reduction ventriculoplasty (see Fig. 1) is a new procedure developed in Brazil by Dr. Randas Batista and is based on the same principles of cardiac dimension and the

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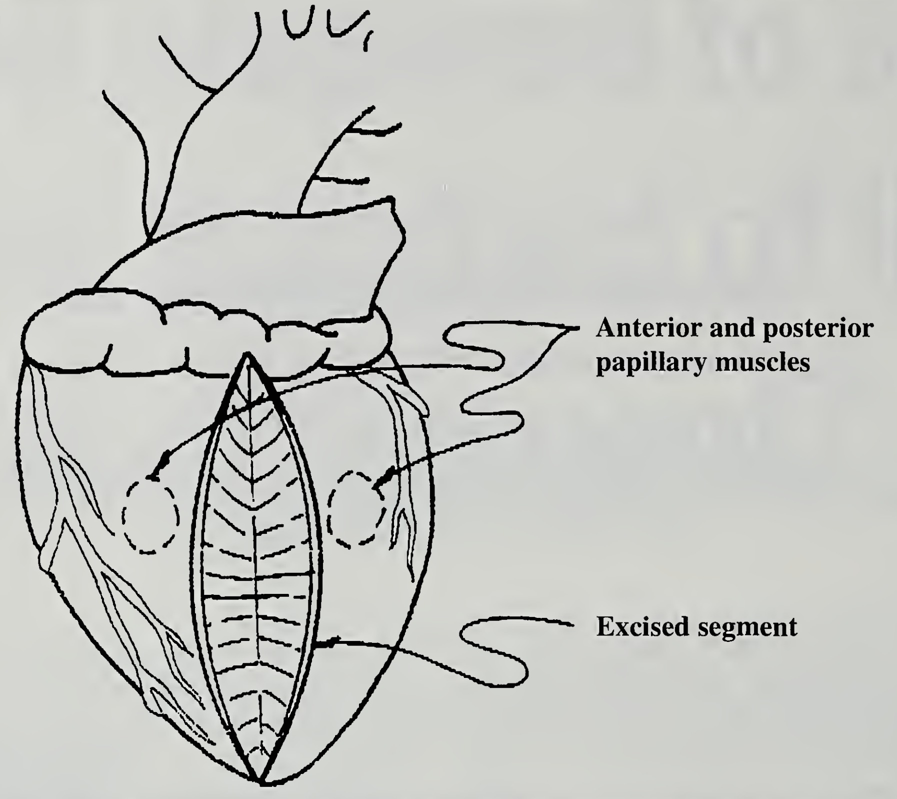

Figure 1.—Schematic representation of reduction entriculoplasty procedure. Note resection of lateral wall of left ventricle from papillary muscle to papillary muscle and from apex to base.

adverse effect of dilatation on function. As with LVA, the reduction ventriculoplasty is predicated on the expectation that a surgical reduction in left ventricular size can, in one discrete intervention, improve left ventricular performance. The key original concept developed by Batista is that reduction of chamber size can be applied to patients with dilated cardiomyopathy rather than being limited to those with discrete left ventricular aneurysm. In contrast to aneurysm resection, in which thinned-out necrotic scar is removed, Batista's operation removes live, viable muscle to effect reduction in chamber size; the resected muscle is no different from the remaining viable, albeit myopathic, ventricular muscle.

The Batista procedure involves excision of the lateral free wall of the left ventricle between the two papillary muscles from the apex to the base of the heart.[5] While Batista has performed this operation on 308 patients in Brazil, the procedure has been virtually untested elsewhere. Brazilian data (unpublished) indicate an operative mortality of 19%, with an additional 21% mortality in the first postoperative year. Precise clinical and quantitative functional evaluation are lacking postoperatively.

We report our first clinical application of the reduction ventriculoplasty procedure under an experimental protocol approved by the Human Investigation Committee at Yale-New Haven Hospital. (An earlier compassionate, nonprotocol application in a moribund patient achieved sufficient improvement in cardiac function to allow weaning from mechanical circulatory support, and prolonged the patient's life for an additional 15 days.)

Table 1.— Exercise Radionuclide Angiocardiography (ERNA) and Echocardiography Before and After Reduction Ventriculoplasty

Test	Three days preoperative	Two weeks postoperative	Percent change
ERNA ejection fraction	17%	30%	76%
ERNA left ventricular end-diastolic volume	408 ml	293 ml	28%
Echocardiography ejection fraction	15%	34%	127%
Echocardiography left ventricular end-diastolic dimension	7.1 cm	6.2 cm	12%

Case Report

A 44-year-old woman with hypertension and massive obesity (5ft5in, 265 lb) and a seven-year history of severe idiopathic cardiomyopathy was referred for heart transplantation. Her one brother and parents were free of cardiomyopathy. The patient had required multiple hospitalizations for congestive heart failure. She progressed to class IV status despite optimal medical management (with digitalis, diuretics, and angiotensin converting enzyme-inhibitors), and echocardiographic examination showed a severely depressed and dilated left ventricle as well as moderately severe mitral and tricuspid regurgitation.

She was admitted acutely to our service complaining of severe difficulty breathing. She was found to be in pulmonary edema and was placed in the intensive care unit (ICU). Doppler examination of the leg veins indicated thrombosis, likely due to her low-flow circulatory state. Pleuritic pain suggested peripheral pulmonary embolism, and accordingly an inferior vena caval filter was placed percutaneously. Atrial flutter/fibrillation developed. Intravenous procainamide was required to control cardiac rhythm, as well as intravenous dobutamine to augment cardiac contractility.

A chest x-ray film revealed an enlarged heart with increased vascular markings. Cardiac catheterization demonstrated normal coronary arteries and severe pulmonary hypertension (pulmonary artery pressures of 70/40, with a pulmonary capillary wedge pressure of 30, and a left ventricular end-diastolic pressure of 32 mm Hg). Left ventriculography disclosed a dilated, severely hypocontractile left ventricle with 3+ mitral insufficiency and an ejection fraction of 17%.

For protocol purposes, a six-minute walk was attempted, but the patient was able to walk only 25 feet, and that with nursing assistance. A signal-averaged electrocardiogram revealed abnormal late potentials, suggesting a propensity for severe ventricular arrhythmias. Cardiac magnetic resonance imaging could not be performed because the patient was ICU bound on intravenous medications.

On equilibrium radionuclide angiocardiography (ERNA) examination, all four chambers of the heart were found to be enlarged, but especially the left ventricle, which demonstrated an ejection fraction of 17% and an end-diastolic volume of 408 mL. Echocardiography at this time demonstrated a globally depressed and dilated left ventricle, with an ejection fraction of 15%, an end-systolic dimension of 6.5 cm, and an end-diastolic dimension of 7.1 cm. Pulmonary hypertension was also evident by echocardiography parameters.

An intra-aortic balloon pump was placed for cardiac support, and the patient underwent the reduction ventriculoplasty procedure. The resection was done from the anterior papillary muscle to the posterior papillary muscle, moving from apex to base. A mitral valve repair, tricuspid valve repair, and closure of a patent foramen ovale were also performed. Total bypass time was 70 minutes. No aortic cross-clamping was utilized and no cardioplegia was required. In addition to the intraaortic balloon pump, isoproterenol was used for cardiac support after bypass. Immediate improvement in cardiac size and performance was visible in the operative field and was confirmed by intraoperative transesophageal echocardiography.

The patient did extremely well hemodynamically and the intraaortic balloon pump was removed on postoperative day one and inotropic infusions were weaned by postoperative day two. Atrial fibrillation occurred on the third postoperative day, as well as one episode of ventricular fibrillation requiring cardioversion. Accordingly, the patient had an implantable cardioverter-defibrillator (ICD) inserted on postoperative day five. The patient was transferred from the ICU to the floor on postoperative day seven, by which time she was able to ambulate appropriately for her postoperative state. She was discharged from the hospital to home on postoperative day nine.

She has remained much improved clinically, able to ambulate without restriction. She has resumed work full-time. Heart failure classification is New York Heart Association I-II. She continues on a carefully regulated medical regimen of digitalis, diuretics, and angiotensin converting exzyme inhibitors. The patient had an appropriate ICD discharge at two months postoperatively; she was given amiodarone to limit the frequency of arrthymia episodes. She has maintained sinus rhythm and is alive and well, now three months postprocedure.

Left ventricular size and function were objectively determined at a two-week postprocedure outpatient follow-up, both by ERNA scan and echocardiogram (see Table). The patient's left ventricular volume had dropped from 408 mL to 293 mL (by ERNA), a 28% reduction. Her ejection fraction was 30% by ERNA and 34% by echocardiography (representing improvements over the preoperative parameters of 76% and 127%, respectively, by ERNA and echo).

Discussion

To the best of our knowledge, this patient represents the first application of the ventricular reduction procedure in New England. This initial experience is favorable. A patient previously ICU bound with end-stage heart failure has been restored to a fully functional state. Objective parameters indicate achievement of a reduction in left ventricular volume by one-quarter and a doubling of the ejection fraction. In addition to these objective parameters, the patient notes a dramatic improvement in her quality of life. There were no other viable options for this patient, as transplantation was essentially contraindicated by pulmonary hypertension, and mechanical left ventricular replacement is restricted to transplant candidates.

Many open questions remain regarding reduction ventriculoplasty. 1) The *safety* of the procedure is at issue. The high operative mortality experienced in Brazil certainly reflects the critically ill condition of these patients. It is possible that the better technology available in this country for perioperative support may improve operative mortality. 2) The *effectiveness* of the procedure needs to be proven by objective pre- and postoperative evaluation of morphologic and functional parameters as well as symptomatic state and functional capacity. 3) The *durability* of benefit needs to be demonstrated. Virtually no information is available on this issue. It may be that benefit is durable, or alternatively, it may be found that dilatation and dysfunction recur. Our hope is that the procedure of reduction ventriculoplasty restores the patient to a cardiac size and level of cardiac function similar to that enjoyed perhaps years previously, before the deterioration to end-stage. 4) The *indications* for the procedure need to be elucidated. It is possible that cardiomyopathies of various etiologies will respond differently to reduction ventriculoplasty. Much of the experience in Brazil is with Chagas disease, which is virtually unknown in this country. 5) The role of *arrhythmias* in late mortality postreduction ventriculoplasty needs to be elucidated. Prophylactic placement of the ICD may be warranted.

Batista's innovative application of the time-honored law of Laplace to develop a surgical procedure for dilated cardiomyopathy may prove to be a turning point in the treatment of heart failure. The reduction ventriculoplasty procedure may become useful as a bridge to transplantation or even as a sole treatment that replaces transplantation in some patients. The initial case experience presented here is favorable. The formal Human Investigation Committee protocol at Yale University for reduction ventriculoplasty is designed to address many of the myriad of unanswered questions regarding this innovative surgical procedure.

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Minimally Invasive Coronary Artery Bypass Grafting: Initial Connecticut Experience

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ABSTRACT—We report the initial Connecticut experience with minimally invasive coronary artery bypass grafting. This procedure allows bypass grafting to the left anterior descending coronary artery utilizing the internal mammary artery as the conduit. The procedure is minimally invasive because it is performed through a mini-thoracotomy incision in the fourth anterior intercostal space and it is conducted without the use of cardiopulmonary bypass.

The procedure has been applied to 13 patients operated between February and October 1996. All but one patient selected were poor candidates for conventional coronary artery bypass surgery because of advanced age (6), chronic renal failure/dialysis/kidney transplant (4), redo status with vulnerable grafts (1), severe peripheral vascular disease (6), severe chronic obstructive pulmonary disease (4).

All patients survived operation and were discharged in good condition. Mean postoperative intubation time was seven hours and mean hospital stay was 4.5 days despite the very high pre-existing comorbidity of these patients.

All patients are alive at the current follow-up time. Two patients required a conventional bypass procedure for occlusion of the minimally invasive graft, the first because of diffuse disease in the target artery and the second attributable to the technical limitations of minimally invasive coronary artery bypass grafting; both tolerated the subsequent procedure well. All patients are now angina-free. All four grafts studied by routine postoperative angiography were widely patent. Routine post-operative exercise nuclear imaging was normal in an additional patient.

This procedure of minimally invasive coronary artery bypass grafting offers significant advantages compared to the conventional bypass procedure (short hospital stay, quick recovery, and, especially, avoidance of cerebrovascular accidents caused by the heart-lung machine). This minimally invasive procedure is expected to apply to a growing percentage of patients. The procedure, especially vis-á-vis angioplasty, may well offer the superior long-term patency of the mammary conduit achieved with a modest initial "investment" in hospital stay, costs of medical care, and discomfort and disability. A prospective, randomized trial comparing angioplasty and minimally invasive coronary artery bypass grafting is warranted.

Abreviations Used in Text

LAD = left anterior descending
MIC = minimally invasive coronary artery bypass grafting
IMA = internal mammary artery
CABG = coronary artery bypass grafting

Introduction

THE coronary artery bypass procedure is considered to be among the most extensively tested and best proven surgical treatments in the history of medicine. The proce-

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dure is safe (mortality of 1% in good-risk patients) and effective (95% early graft patency, with 50% 10-year patency for vein grafts and 95% 10-year patency for mammary grafts).[1] Nonetheless, problems do occur with conventional coronary artery bypass. Foremost are cerebral vascular events, which occur in 18.2% of patients with significant carotid artery disease and 43.7% of patients with prior stroke,[2] and manifest a five-fold increase in incidence in patients over 70 years of age.[3] Cerebrovascular events are often devastating, resulting in death or severe impairment of quality of life. Furthermore, in this age of cost containment, we are recognizing increasingly that use of the heart-lung machine in conventional bypass surgery has broad-ranging effects on many organ systems,[4,5] which require days to weeks to resolve. Even with concerted emphasis on cost containment, it has not proved possible to reduce average hospitalization below five postoperative days.

Several groups are accruing an initial experience with minimally invasive coronary artery bypass grafting (MIC). This early experience is appearing in the literature, often as reports of very small numbers of patients.[6-9] This emerging technology is minimally invasive because 1) it is performed through a mini-thoracotomy incision in the fourth anterior intercostal space and 2) it is performed without use of the heart-lung machine and cardiopulmonary bypass. Figure 1 shows a schematic representation of the small incision utilized. The procedure is performed on the beating, working heart, with local control of the coronary artery by proximal and distal snares and facilitation of visualization by a carbon-dioxide (CO_2) "blower" device. The procedure of MIC draws upon earlier work by Buffolo in South America,[10,11] who for many years in thousands of patients performed coronary bypass without the heart-lung machine, albeit through a conventional median sternotomy. Current thoracoscopic techniques have allowed thoracic surgeons to be comfortable with mini-incisions and exposures, and thus the MIC has emerged as a combination of these techniques. One strong impetus driving the development of this new approach to coronary artery bypass surgery is cost containment.

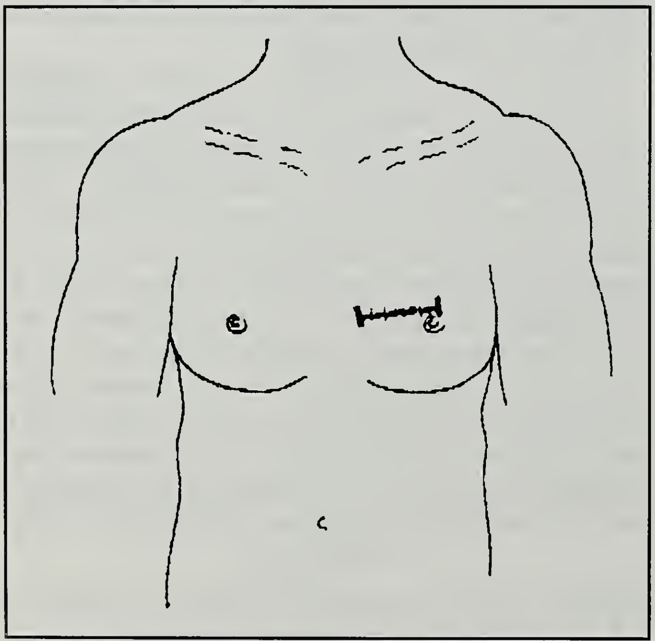

Figure 1.—Schematic representation of mini-thoracotomy incision utilized for minimally invasive coronary bypass.

Each clinical report of MIC appearing in the literature describes a "learning curve," with difficulties at the initiation of the experience with this innovative approach to revascularization.

We report our initial Connecticut experience with MIC, representing operations performed by the team at Yale-New Haven Hospital and the West Haven Veteran's Administration Hospital.

Materials and Methods

The characteristics of the patients undergoing MIC are shown in Table 1. Each patient (except one) selected for inclusion was a high-risk candidate for revascularization by the conventional technique, with median sternotomy and cardiopulmonary bypass. The high-risk characteristics included: advanced age (patients #2,3,7,11,13), severe peripheral vascular disease including severe aortic arteriosclerosis and/or severe bilateral carotid artery disease (patients #1,2,5,6,8,10), dialysis-dependent, chronic renal failure, and/or creatinine > 2.5 mg/dL (patients #1,4,7,9), prior coronary artery bypass graft with low left ventricular ejection fraction (patient #10), and severe chronic obstrucitve pulmonary disease (patients #1,4,5,8). Patient 12 was a healthy 52-year-old man appropriate for either technique.

Catheterization findings.—Cardiac catheterization in all patients demonstrated either disease limited to the left anterior descending (LAD) or a pattern of relatively mild disease in other systems, so that the LAD was considered the "culprit" vessel.[12]

Surgical technique.—(See Fig. 1.) An 8 cm incision is made over the fourth costal cartilage from the sternal edge to the left nipple. The fourth costal cartilage is removed subperiosteally for the extent of the incision, so as not to injure the underlying internal mammary artery (IMA). The IMA is dissected free, without the endothoracic fascia, under direct vision from just below the second rib to just above the fifth rib. A narrow (1 cm) portion of the most medial extent of the third costal cartilage is also removed to facilitate exposure. Systemic heparinization is carried out (5,000 units rather than the 20,000 to 30,000 units required for cardiopulmonary bypass). The IMA is transected just above the 5th rib and dilated by intraluminal injection of papaverine, as for conventional bypass. The dilated IMA is set aside while the heart is prepared.

Table 1.—Patient Characteristics

Patient	Sex	Age	High-risk factor(s)	Outcome	Perfusion assessment	Ejection fraction	Discharged days postop
1	M	64	Dialysis-dependent Diffuse vascular disease COPD (severe)	alive and well	cath: MIC closed redone conventionally	60%	3
2	M	83	Advanced age Peripheral vascular disease (acute limb ischemia)	alive and well	cath: MIC closed redone conventionally	20%	38
3	F	82	Advanced age	alive and well		50%	4
4	M	70	COPD (severe) Chronic renal failure	alive and well		45%	6
5	M	66	COPD (severe) Peripheral vascular disease	alive and well		20%	7
6	M	66	Peripheral vascular disease	alive and well	cath: widely patent	35%	7
7	F	85	Advanced age Dialysis-dependent	alive and well	thalium test: normal	40%	3
8	M	54	COPD (severe) Peripheral vascular disease (acute limb ischemia)	alive and well		40%	6
9	M	72	Chronic renal failure Recent upper G.I. bleed S/p kidney transplant	alive and well	cath: widely patent	40%	16
10	M	65	Reoperation Cerebrovascular disease	alive and well	cath: widely patent	50%	6
11	M	79	Advanced age	alive and well	cath: widely patent	40%	3
12	M	52	None	alive and well		55%	2
13	F	85	Advanced age	alive and well		40%	3

COPD = chronic obstructive pulmonary disease

The pericardium is opened obliquely toward the left hip for about 8 cm, overlying the LAD. The pericardium is elevated by traction sutures oriented radially around the pericardial incision. The LAD is inspected for size, accessibility, and relative freedom from severe local arteriosclerotic disease at the level of the proposed anastomosis. Unsuitable local LAD findings at this stage mandate conversion to a conventional CABG procedure for improved exposure, establishment of a bloodless field, and access to a more distal portion of the LAD.

If findings are suitable, the LAD is "snared" just proximal and distal to the level of the proposed anastomosis by double-looped sutures of silk or polypropylene. Soft silastic bolsters are incorporated into each loop to permit gentle, atraumatic occlusion of the LAD when the snare on each loop is tightened.

The heart rate is lowered by administration of intravenous β-blockers (usually esmolol). In patients who have a permanent pacemaker, the heart rate can be conveniently lowered by reprogramming the pacemaker for the duration of the procedure. Intravenous adenosine may be given to accomplish transient complete atrioventricular blockade (of several seconds duration) at times when cardiac standstill is required for placement of critical sutures.

Before beginning the process of anastomosis, one or more five-minute intervals of "ischemic preconditioning" are applied.[13] Recent evidence indicates that such preconditioning allows the heart to tolerate better the actual ischemic interval involved later—in this case, during the actual fashioning of the anastomosis. The electrocardiogram, transesophageal echocardiogram, and filling pressures recorded from the pulmonary artery catheter are observed closely for evidence of ischemia or hemodynamic compromise during the ischemic preconditioning and subsequently during the actual occlusion for performance of the anastomosis.

A rest period of five minutes is allowed after the preconditioning interval, and then the vessel is controlled by the previously placed snares, the arteriotomy into the LAD is performed, and the end-to-side IMA to LAD

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anastomosis created, with running polypropylene suture. The snares on the LAD are suspended to the drapes to minimize movement of the arteriotomy field while the heart continues to beat normally. Four to six fine, radially-oriented sutures placed in the epicardial edge of the opened coronary artery are used to augment immobilization. A "CO_2 blower" is utilized to disperse blood which pools in the open LAD from collateral sources. Individual sutures are placed during the instants between heart beats.

When the anastomosis is completed, snares are released and the IMA graft flow begins. Heparinization is partially reversed (by one-half the calculated dose of protamine), and the incision is closed. If the pleura has not been opened, no chest tube is required, but only a self-actuating drain of the type commonly utilized in plastic surgical applications is used.

Results

A total of 13 patients underwent the minimally invasive procedure over a 7.5-month period. (Additional patients who had surgery without the heart-lung machine via sternotomy or, alternatively, through a thoracotomy *with* use of the heart-lung machine were purposely excluded to concentrate analysis on truly "minimally invasive" procedures.)

The occlusion of the coronary artery was tolerated in all patients without ventricular fibrillation or significant hemodynamic compromise. All anastomoses were successfully completed. Mean occlusion time was 11 minutes (range was eight to 13 minutes). No patient needed to be converted intraoperatively to a conventional median sternotomy approach. All patients survived the operation.

No patient sustained a Q-wave myocardial infarction. Myocardial enzyme release averaged 24.9 units creatine kinase-myocardial band. This value is in line with that expected from cardiac surgery and thoracotomy alone.[14]

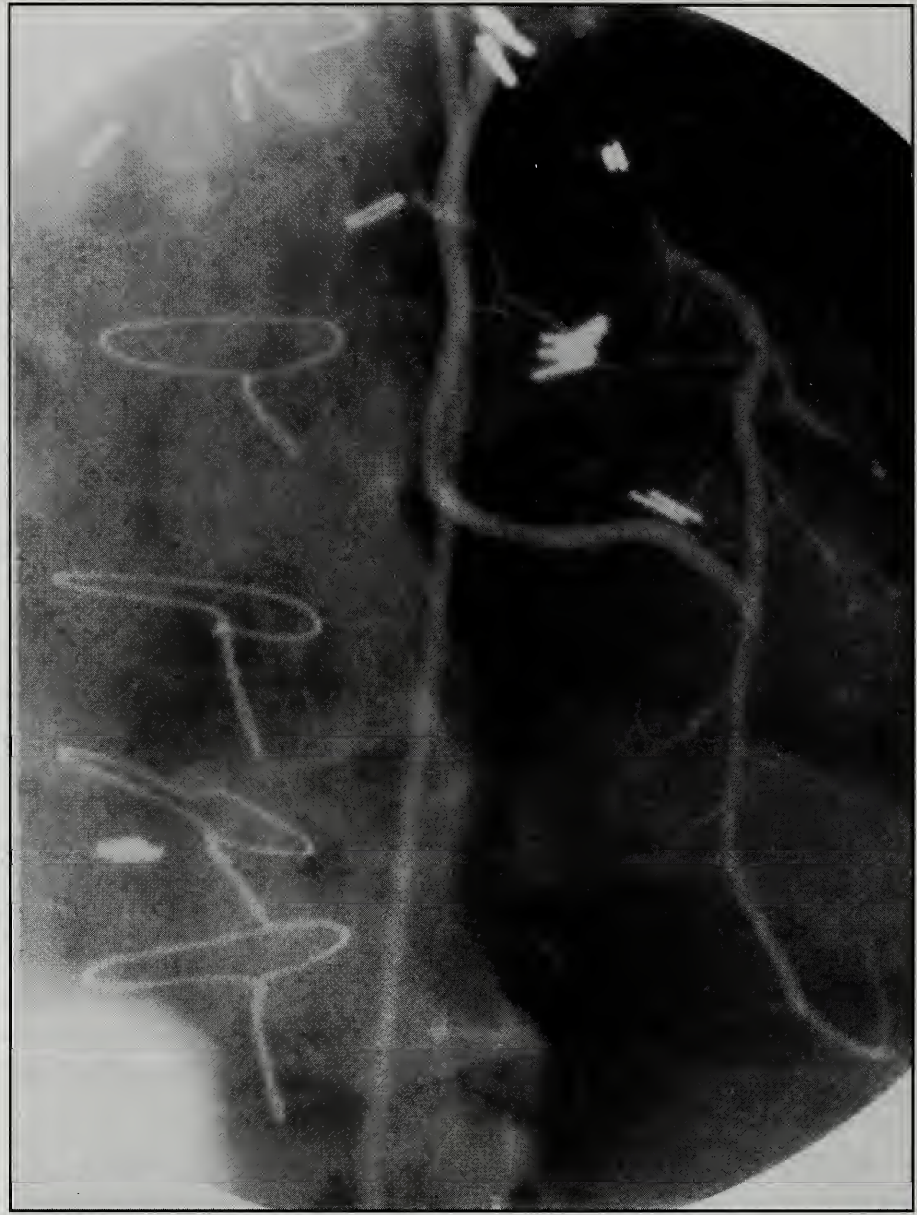
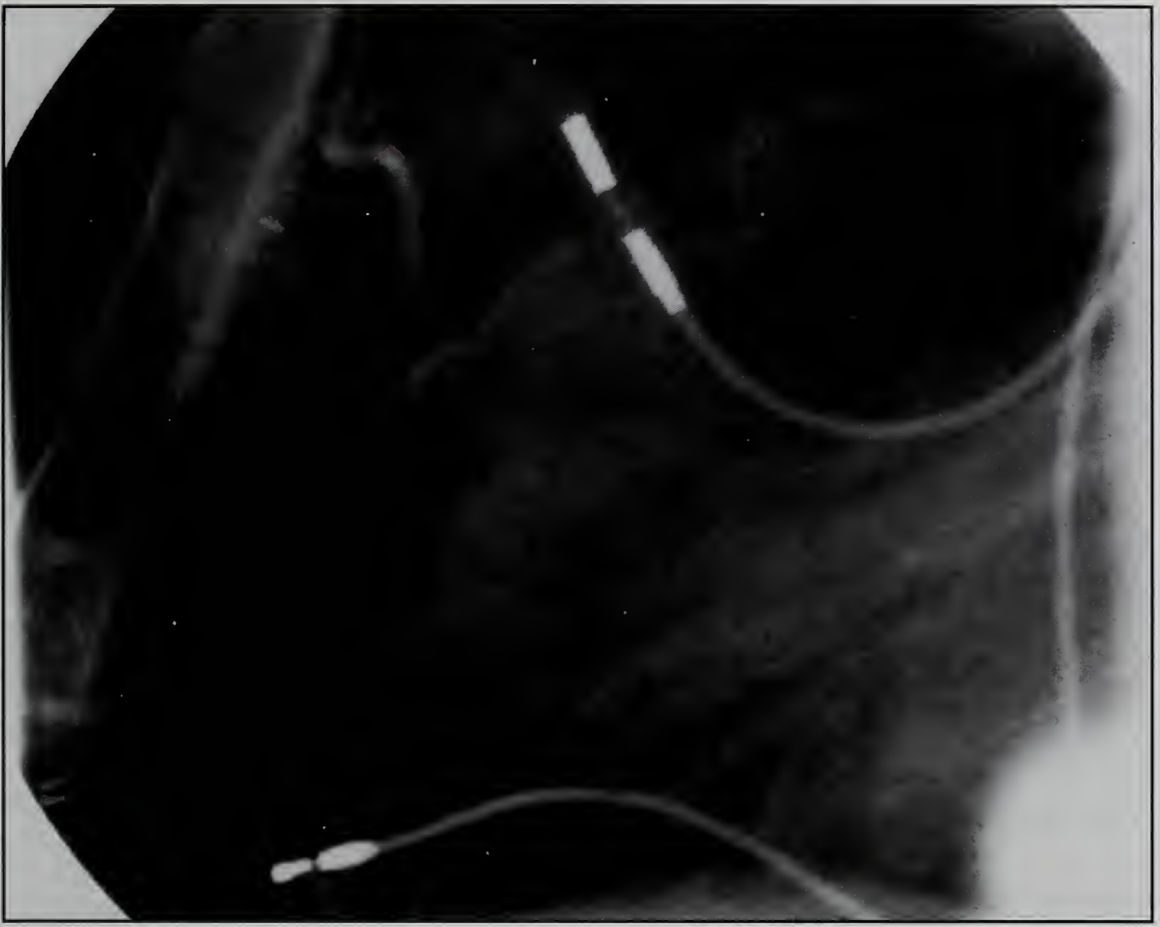


Figure 2.—Two representatives postoperative arteriograms (patient #10 above, patient #11 on next page), showing graft patency and excellent anastomotic architecture.

All patients were extubated in the operating room, on the same day of surgery, or the morning after surgery in the intensive care unit. Mean time to extubation was seven hours. In most cases, patients were transferred to the regular care floor on the day after surgery and discharged as early as the second postoperative day. Discharge day ranged from two to eight (mean of 4.5 days) (one outlier with antecedent acute ischemia of the lower extremity requiring peripheral vascular surgery [#2] and two patients who waited in hospital for routine catheterization [#9,10] are excluded from the mean calculation).

Postoperative cardiac assessments.—Two patients developed closure of the minimally-invasive bypass, one probably attributable to heavy arteriosclerotic burden at the level of anastomosis (#1) and the other to technical factors inherent in the minimally invasive technique (#2). Both patients safely underwent conventional bypass via median sternotomy (one patient four days after MIC, and the



other at presentation with recurrent symptoms two months after MIC). The prior MIC did not adversely complicate the conventional procedure, as there were no adhesions or other impediments to sternotomy or intrapericardial exposure noted at the subsequent operation. In the one patient, whose graft closure is attributed to heavy arteriosclerotic disease at the level of the MIC, a much better quality vessel was available more distally through the additional exposure afforded by median sternotomy. In the other patient, vessel quality was satisfactory throughout, and closure is attributed to technical factors. Both repeat bypass procedures were accomplished without difficulty with saphenous vein conduit.

All patients are currently alive and well, at follow-up ranging from two to 7.5-months (mean of five months).

All patients are currently free of angina.

There have been no intercurrent or subsequent myocardial infarctions or cardiac hospitalizations for myocardial ischemia.

Four patients agreed to routine postoperative cardiac catheterization. All routine postoperative catheterizations indicated widely patent anastomoses (Fig. 2).

One additional patient underwent myocardial perfusion imaging one month postoperatively, indicating uniform perfusion throughout, including the anterior wall.

Discussion

Our impression of the initial minimally invasive coronary artery bypass experience is favorable. The technique of coronary artery occlusion without cardiopulmonary bypass was uniformly tolerated, without the ventricular fibrillation or hemodynamic deterioration which might have been expected. All procedures were completed without complication. All patients survived the operation and were discharged successfully and promptly from the hospital. This finding reflects favorably on the minimally invasive approach, as the patient pool represented an especially "sick" group, with advanced age, severe generalized arteriosclerosis, dialysis-requiring renal failure, impaired left ventricular function, or prior coronary bypass. Patients were selected for this new minimally invasive approach on the basis of their being unsuitable or highrisk for a conventional surgical approach.

The minimally invasive character of this approach was reflected in very early extubation, early transfer from intensive care, and prompt hospital discharge (especially considering the daunting comorbitities). These milestones were routinely achieved more quickly than attainable even by the so-called "fast-track" approach after conventional bypass grafting.[15]

There is no doubt that operative exposure, control of the arteriotomy, and the process of anastomosis with the minimally invasive technique, in which the heart is beating and the coronary arteries are perfused with blood, are inferior to those of the conventional bypass procedure in which the heart is totally still and the coronary arteries totally bloodless. The minimally invasive procedure is, accordingly, more technically challenging. These factors contribute to the general observation that patency rates will not be quite as high with the minimally invasive approach as with the conventional technique.[8,9] Some centers perform immediate postprocedure angiography because of this concern, with immediate conventional CABG if patency is not confirmed—all carried out while the patient is still asleep. In addition to these fundamental relative technical limitations, essentially all centers have reported a steep "learning curve" for the conduct of these procedures. In this context, we were pleased to observe that only two of 13 grafts in this early series needed to be redone by a conventional approach. Postoperative arteriograms obtained in the patients who permitted routine postoperative angiography lend credence to the technical precision attainable despite the limitations in immobilization and exposure inherent in the minimally invasive technique.

It is anticipated that the known superlative long-term patency of the internal mammary conduit[16] will translate to the IMA grafts done by the minimally invasive technique. Although anticipated, this translation of the benefit of the IMA needs to be proven scientifically over time, as certain differences in the method of mammary utilization obtain. (In the minimally invasive technique, for example, the uppermost intercostal branches from the IMA are not accessible and, accordingly, not ligated; this is in contradistinction to the routine ligation of these branches in the conventional approach.)

Methodological developments for improving the conduct of the minimally invasive procedure are rapidly evolving. An apparatus is being designed to provide a still operative field and to minimize the amount of blood bathing the anastomosis. These developments may enable patency rates of minimally invasive procedures to approach those of conventional operations.

In comparison to coronary angioplasty, minimally invasive bypass may offer better early patency and the superlative late patency of the internal mammary artery conduit at an "investment"—in hospitalization, discomfort, and hospital costs—no greater than that of other interventional cardiologic procedures. It is possible that minimally invasive bypass will offer an alternative to angioplasty for patients with localized coronary artery disease, which may forestall the need for a conventional invasive bypass. A minimally invasive bypass to the LAD may very well be combined in certain patients with angioplasty to diseased arteries in other distributions, again serving to delay the need for the invasive bypass procedure. It is encouraging to note that, in this series, a prior minimally invasive bypass did not impair the conduct of a later invasive bypass procedure.

One of the biggest advantages of the minimally invasive technique may reside in its avoidance of arterial cannulation and use of the heart-lung machine. The elderly and those with known cerebrovascular disease or generalized arteriosclerosis are known to be at markedly elevated risk for cerebrovascular accidents following conventional bypass procedures. These events are devastating to quality of life and very costly in aftercare. Despite great advances, cardiothoracic surgery has made little progress in decreasing the frequency of these events. The minimally invasive technique obviates these concerns regarding perioperative cerebrovascular events, as the entire procedure is performed peripherally in the vascular tree—on the LAD with the IMA. The central arteries are undisturbed and mechanical perfusion is not utilized, minimizing any possible impact on the brain.

Our initial Connecticut experience strongly supports the continued pursuit of experience with the minimally invasive approach to coronary artery bypass, which may well prove to be an important component of the armamentarium to combat coronary artery disease in the future. A prospective, randomized comparison between angioplasty and minimally invasive bypass to the LAD is warranted.

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Reporting Ejection Fraction After Myocardial Infarction: An Opportunity for Quality Improvement in Echocardiography

DAVID J. GOLDBERG, M.D., MARTHA J. RADFORD, M.D.,
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ABSTRACT—he assessment of left ventricular function has assumed considerable importance in tailoring postmyocardial infarction therapy. This assessment is frequently accomplished by echocardiography. In many cases, the language of an official report may be sufficiently vague as to preclude judgment about overall left ventricular systolic function. To address this issue, we analyzed official reports from echocardiography studies performed on two hundred Medicare beneficiaries hospitalized with acute myocardial infarction in Connecticut. Our principal finding is that 65 (32.5%) did not convey sufficient information to determine whether the left ventricular ejection fraction was less than 40%. Improving the reporting of echocardiograms may provide an excellent opportunity to enhance the care of patients after myocardial infarction.

Introduction

THE management of acute myocardial infarction is constantly evolving. New clinical trials are continuously updating the potential benefits and risks of available medical therapies. Angiotensin-converting enzyme inhibitors in particular have gained widespread acceptance in providing this benefit to those identified with ejection fractions less than 40%.[1,2] Thus, the assessment of left ventricular function has assumed considerable importance in tailoring post myocardial infarction therapy.

Echocardiography is frequently used to evaluate left ventricular function because it is noninvasive, widely available, relatively low cost, and provides information about valvular function. Interpreters provide this evaluation by a qualitative description and/or a quantitative estimate of ejection fraction. In many cases, however, the language of an official report may be sufficiently vague as to preclude judgment about the overall left ventricular systolic function. This key piece of information is therefore not available to the clinician providing patient care.

To address this issue, we analyzed official reports of echocardiograms from a retrospective review of 200 Medicare beneficiaries hospitalized with an acute myocardial infarction in Connecticut. Our objectives were: 1) to determine how frequently official echocardiogram reports contain adequate information to determine whether ejection fraction is less than 40%; 2) to determine, when inadequate information is available, how often this is ascribed to technical inadequacy.

Methods

Study Sample.—The study sample was derived from the Cooperative Cardiovascular Project (CCP) Pilot in Connecticut, a Health Care Financing Administration (HCFA) initiative to improve the quality of care for Medicare beneficiaries.[3] All patients were admitted to Connecticut hospitals from June 1992 through February 1993 with a diagnosis of acute myocardial infarction. We randomly selected two hundred patients, all of whom had complete echocardiography studies during their hospitalization.

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Table 1.—Examples of Descriptors

Adequate	Inadequate
Ejection Fraction:	Left Ventricular Function:
Normal	Diminished
Near Normal	Decreased
Mildly depressed	Fair
Severely Depressed	Moderately Decreased
Contractility:	Mild to Mod. Decreased
Excellent	At least Mildly Depressed
Good	Multiple Wall Motion Abnormalities
Preserved	Multiple areas of (hypo, dys, or a)kinesis
Mildly Reduced	"Distal Half of Left Ventricle moves Poorly"
Severely Reduced	"Posterior Wall is Down"
Poor	
Minimal	
"No Wall Motion Abnormalities"	
"Borderline Left Ventricular Function"	

Data Collection.—Official echocardiogram reports were analyzed to determine if they contained adequate information to determine whether the ejection fraction was less than 40%. Ejection fraction was considered interpretable if either 1) a quantitative description was provided (a numerical estimate or range) or 2) an adequate qualitative description was provided (examples in Table 1). If an inadequate qualitative description was provided (examples in Table 1), ejection fraction was considered not interpretable. Technical inadequacy cited in these reports was also noted.

Results

Study Sample.—Study sample patients ranged from 65 to 97 years of age (81 patients 65 to 74 years, 83 patients 75 to 84 years, 34 patients ≥ 85 years). There were 98 females and 102 males. Twenty-seven hospitals, ranging from large tertiary care teaching hospitals to small community institutions, were represented in this study.

Echocardiogram Results.—Of the 200 echocardiogram reports, 65 (32.5%) did not convey clinically important information as to whether the ejection fraction was less than 40% (Table 2). Eleven of these cases (17% of not interpretable, 5% of total sample) described the ejection fraction as "moderately reduced" without further elaboration or definition. Only 11 cases (5% of total sample), cited technical inadequacy leaving 54 (28% of total sample) neither providing an adequate estimate of ejection fraction nor a reason not to do so.

Table 2.—Echocardiogram Study Results

Total Echocardiograms:	200
Ejection fraction interpretable:	135 (67.5%)
Quantitative	92 (46%)
Adequate qualitative	43 (22%)
Ejection fraction not interpretable:	65 (32.5%)
Technical inadequacy cited	11 (5%)

One hundred thirty-five (67.5% of total sample) echocardiogram reports provided information about left ventricular function that was interpretable. The ejection fraction was quantitatively described in 92 (46%) and an adequate qualitative description was provided in 43 (22%) cases.

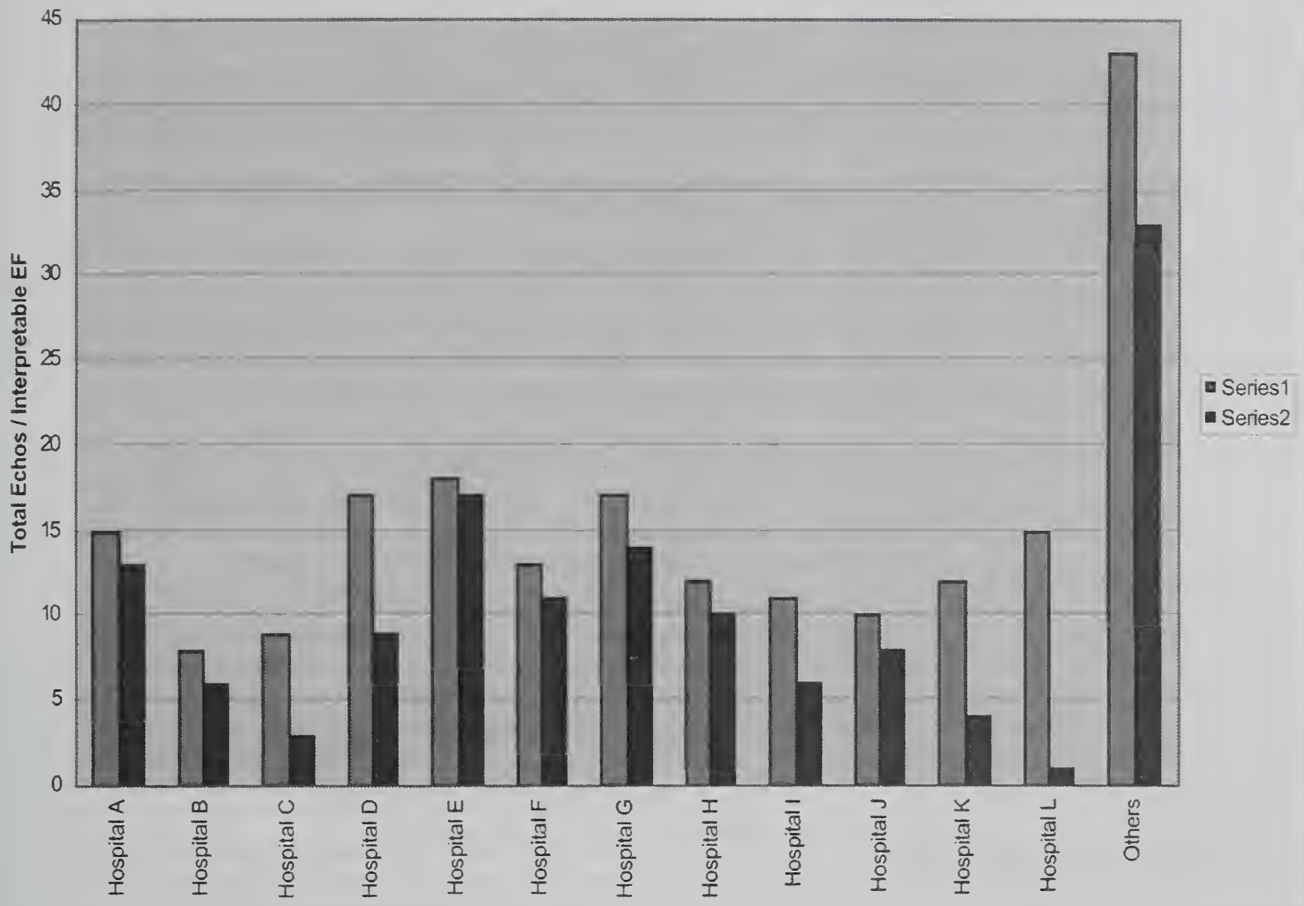
These results were also stratified by hospital (Fig. 1). There was significant variability among individual institutions.

Discussion

Echocardiography laboratories are constantly seeking to improve the quality of their studies.[4] One such opportunity exists in the reporting of results. The quantification of ejection fraction after myocardial infarction is important for therapeutic decision making. Therefore, every technically adequate study should include an estimation of ejection fraction or an explanation as to why it cannot be performed. While focus on technical quality of echocardiograms is important, a technically outstanding study is of no benefit to the clinician without communication of the relevant results.

The frequency of interpretable echocardiogram reports ranged from 7% to 94% among individual hospitals. This may be a reflection of the culture at individual institutions. Thus, the potential for improvement varies across the institutions.

FIGURE I. ECHO STUDY RESULTS BY HOSPITAL



A limitation of our study is a lack of knowledge as to why the ejection fraction was not reported. It is possible that more of the echocardiograms studied were technically inadequate than were specified in the official report. An additional limitation is a lack of knowledge regarding standardization of terms within a given institution. For example, "moderately reduced" may imply an ejection fraction between 30% and 40% in a particular laboratory. These terms, however, were not defined as such in any individual report. If readers of echocardiograms wish to use qualitative statements when describing left ventricular function, they should have clinical relevance and reproducibility. The approximate ejection fraction range for qualitative descriptors should be included in the report for reference by clinicians. An important strength of our study is the examination of reports across a diverse population of hospitals in Connecticut.

In conclusion, we have identified an important opportunity for improvement in the care of patients post myocardial infarction. Our study suggests that a significant portion of echocardiograms do not adequately quantify ejection fraction to direct clinicians in the initiation of ACE inhibitor therapy. If echocardiography is to fulfill its potential in facilitating clinical decision making, information about the ejection fraction must be communicated explicitly.

Acknowledgment.—We are indebted to the members of the Peer Review Organization in Middletown, Connecticut, and to all the other individuals and organizations who contributed to the development and implementation of the Cooperative Cardiovascular Project Pilot.

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A Collaborative Project in Connecticut to Improve the Care of Patients with Acute Myocardial Infarction

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Improvements in care following dissemination of comparative data have enabled seven hospitals in Connecticut to decrease their door-to-needle time for thrombolytic therapy to less than 45 minutes, and several hospitals have reported increasing their usage rates of thrombolytics, aspirin, and beta blockers to more than 90% among eligible patients.

Article-at-a-Glance

***Background.*—State-based peer review organizations (PROs) and individual hospitals are challenged to achieve their quality improvement (QI) goals with shrinking resources. In 1993-1994 the Connecticut PRO and 15 local hospitals generated a comparative QI database on acute myocardial infarction (AMI) care for 1,202 Medicare and non-Medicare patients discharged in 1992 and 1993.**

***Methods.*—A steering committee composed of hospital and PRO representatives was assembled to provide oversight. PRO staff developed a chart abstraction tool and trained hospital abstracters who collected and submitted data to the PRO for comparative analyses. Written feedback was provided to all hospitals and supplemented with onsite presentations when requested. Each hospital prepared a written QI plan based on its unique data profile.**

***Results.*—Opportunities for improvement were identified at all hospitals. The most commonly targeted areas for improvement included the use of thrombolytics at presentation, aspirin at presentation and at discharge, and beta blockers at discharge. Improvement interventions included staff education sessions, development of AMI critical paths and standing orders, and storage of appropriate medications in emergency departments. Self-report data from the hospitals indicate improvements in care.**

***Discussion.*—PROs and hospitals can augment their individual QI activities by working together to share data, resources, and lessons learned. Twenty-three hospitals are now collaborating with the Connecticut PRO on a similarly designed QI project aimed at improving the care of patients hospitalized with atrial fibrillation. This project includes a more formal means of communicating QI interventions.**

THE quality of health care in the United States is less than optimal[1] and traditional methods of medical quality assurance have not fostered a widespread pursuit of excellence. Consequently, there has been a recent movement within health care to adopt industrial methods of quality improvement (QI)[2-5] in hopes of reproducing the success seen in some segments of industry. The U.S. Health Care Financing Administration (HCFA) has been among the leaders in this movement in its implementation of the Health Care Quality Improvement Program for Medicare.[6] This program focuses on analysis of patterns of care and nonpunitive feedback to providers rather than individual case review and adversarial interactions. Both individual hospitals and the peer review organizations (PROs), which conduct Medicare's QI activities, are challenged to implement these new QI methods with limited resources.

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Table 1.—Processes and Outcomes of Care, Myocardial Infarction Project II, 1992-1993

Processes of Care

- Thrombolytic therapy: Use and timing
- Aspirin: In-hospital and at discharge
- Beta blockers: At discharge
- Measurement of ejection fraction
- Angiotensin-converting enzyme (ACE) inhibitors
- Calcium channel blockers
- Procedures: Angiography, PTCA, CABG

Outcomes of Care

- In-hospital mortality
- Length of stay

PTCA = percutaneous transluminal coronary angioplasty; CABG = coronary artery bypass graft.

This article describes a model QI collaboration between one state's PRO and 15 acute care hospitals. It describes how the Connecticut Peer Review Organization (CPRO) and the hospitals combined resources in 1993-1994 to generate a database on acute myocardial infarction (AMI) care for Medicare and non-Medicare patients and how this database was used to profile and improve care. The project, called the Myocardial Infarction Project II (MIP II), is a sequel to an earlier CPRO project conducted in 1992-1993 that also profiled AMI care.[7] We present MIP II for two reasons: 1) as an example of a successful QI collaboration among a PRO, hospitals, and physicians; and 2) to highlight some of the challenges faced by PROs and providers in implementing QI principles.

Project Oversight

The MIP II was overseen by a steering committee consisting of representatives of the participating hospitals and the PRO (see Appendix). These representatives included physicians (that is, cardiologists and internists) who routinely provide care to patients with AMI, as well as nurses, medical records staff, and QI professionals. The PRO's physician clinical coordinator [T.P.M.] served as the chair of the steering committee, which decided on the actual processes and outcomes of care to be profiled (Table 1), reviewed data as they became available, and made working decisions throughout the project. All decisions were made by group consensus after discussion had clarified and resolved points of disagreement. For example, the steering committee, which first met in August 1993, determined early on that the study would not be limited to elderly patients with AMI. Rather, any adult patient who was hospitalized for treatment of AMI at one of the participating hospitals would be eligible for inclusion in the study.

Table 2.—Thrombolytic Therapy Indications and Contraindications, Myocardial Infarction Project II, 1992-1993

Thrombolytic Indications

S-T segment elevation ≥ 1 mm in two contiguous leads or left bundle branch block … and chest pain duration ≤ 6 hours.

Thrombolytic Contraindications (one of . . .)

- Hemorrhagic retinopathy
- Acute internal bleeding
- Recent cardiopulmonary resuscitation
- Suspicion of dissecting aortic aneurysm
- Trauma within previous two weeks
- Major surgery within previous two weeks
- History of cerebrovascular accident
- History of head trauma or intracranial neoplasm
- Admission systolic BP ≥ 200 or diastolic BP ≥ 120.

BP = blood pressure.

Building the Database

The MIP II database was assembled from cases that had a principal diagnosis of AMI (ICD-9-CM Code 410.XX) and were discharged in calendar year 1992 or 1993. Cases were selected from discharges beginning in December 1993 and working backward consecutively until at least 50 cases were available for each hospital. Since CPRO did not have sufficient resources to abstract a large number of cases at each hospital, the group decided that the hospitals would supply their own abstractors. Each hospital's sample size (≥ 50) was set by its committee members on the basis of the hospital's capacity to abstract medical records.

A data collection instrument was developed, field tested, and refined by PRO staff. This instrument was used to collect data on

- patient characteristics (for example, demographics; comorbidities; and Killip class, or degree of congestive heart failure in patients with AMI);
- processes of care (for example, usage of thrombolytics, aspirin, and beta blockers in eligible patients); and
- outcomes (for example, in-hospital mortality and length of stay).

Abstractors from the hospitals were trained by CPRO staff. The abstracters were not allowed to begin data submission until they had achieved a 90% abstraction agreement with a CPRO trainer. Abstractors collected data from charts at their own organizations and mailed the completed data collection instruments to CPRO. For those patients who were transferred between hospitals, mortality and cardiovascular procedure data were collected by abstracters at the receiving hospitals. Five percent of each hospital's Medicare cases were reabstracted by CPRO staff so that variations in abstraction could be immediately identified and corrected. Admission electrocardiograms for all cases were submitted to CPRO and reviewed by one of two board-certified cardiologists [M.J.R., H.M.K.] for the presence of thrombolytic therapy indications (for example, S-T segment elevation or left bundle branch block). Information on hospital policies pertaining to AMI care was provided by each hospital's committee representative.

Submitted data were entered into a database management system at CPRO. Once the database was completely assembled, frequencies were tabulated for certain key variables: Killip class, ejection fraction, comorbidities, and indications and contraindications for the therapies. The steering committee reviewed the data summaries and targeted problem variables for reabstraction, redefinition using other variables, or deletion. Committee members then worked directly with their hospitals' abstracters and with CPRO staff to finalize the database.

Disseminating the Data

Summaries of patient characteristics, therapy utilization rates (among eligible patients and among all patients), and risk-adjusted mortality rates were compiled by CPRO staff and presented to the steering committee in a group session at CPRO on 4 August 1994. Next, a written summary of the project was assembled and mailed to the hospitals. Recipients included the committee representative, the designated hospital liaison to CPRO (usually the QI chairperson), the chairperson of cardiology, and the chief executive officer. These individuals were asked to disseminate the data to the appropriate staff within their organizations. In addition, CPRO's clinical coordinator conducted several onsite hospital presentations jointly with committee representatives. The format and emphasis of these presentations were customized on the basis of the input of the committee representative and hospital liaison regarding their organization's ongoing QI activities and any perceived barriers to acceptance of the data. Data for individual hospitals were displayed side by side with data from other hospitals (identities shielded) of similar size and with similar invasive cardiovascular capacity in all written and onsite presentations. This format facilitated quick and meaningful comparisons among hospitals and the easy identification of benchmark utilization rates[8,9] and opportunities to improve care.

Hospital and Patient Characteristics

The 15 hospitals participating in the MIP II ranged in size from 78 to 850 beds and included teaching and nonteaching institutions; all had intensive care units. For comparison purposes, five hospitals were characterized as offering each of three levels of services:

- Full invasive cardiovascular (CV) services (that is, diagnostic angiography, angioplasty, and bypass surgery);
- Partial invasive CV services (diagnostic angiography); or
- No invasive CV services (the absence of all the above).

There were 1,233 AMI admissions in the database, 21 of which represented patients who were readmitted for the same diagnosis one or more times. Thus, 1,212 patients were represented in the final database.

Depending on available resources, each hospital submitted from 50 to 148 cases. There were 816 cases from among elderly patients (≥ 65 years) and 396 cases from the nonelderly. The mean patient age was 68.9 years; 90% were Caucasian and 57% were male. Most patients were categorized as Killip class I or II (84.6%) during the first 24 hours of hospitalization. The most common comorbidities documented in patients' admission histories were congestive heart failure (27.4%), chronic obstructive pulmonary disease or asthma (14.9%), cancer (10.5%), and stroke (10.2%).

The following section presents data on thrombolytic therapy. These data are presented to illustrate some of the important issues in performance profiling, data feedback, and hospital use of QI data. Similar analyses performed on other processes of care are not presented here.

Thrombolytic Therapy

Usage of thrombolytic therapy was profiled in two ways, first among eligible patients and second among all patients. Eligible patients were those who had indications for the therapy and no contraindications. Indications and contraindications were set by consensus of the steering committee on the basis of members' knowledge of the medical literature and local practice standards (Table 2). As illustrated in Table 3, there were a total of 1,202 patients included in this analysis. The initial electrocardiograms of 10 patients were not found in their medical records; therefore, these patients were eliminated from the original database of 1,212 patients. Thrombolytic usage was defined as thrombolytic administration within 24 hours of hospital arrival. Roughly one-quarter (28.6%) of all patients met indication criteria, while another one-quarter (23.7%) had one or more contraindications. Overall, 22.5% of patients from the original database were eligible for the therapy, and 71.2% of these received it. Overall usage of thrombolytic therapy was 29.4%. The mean time from hospital presentation to thrombolytic administration among eligible patients was 70 minutes (range, eight to 1,173 minutes). The mean time to thrombolytic administration among all patients was 106 minutes (range, zero to 367 minutes).

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Table 3. Thrombolytic Therapy Use and Timing, Myocardial Infarction Project II, 1992-1993

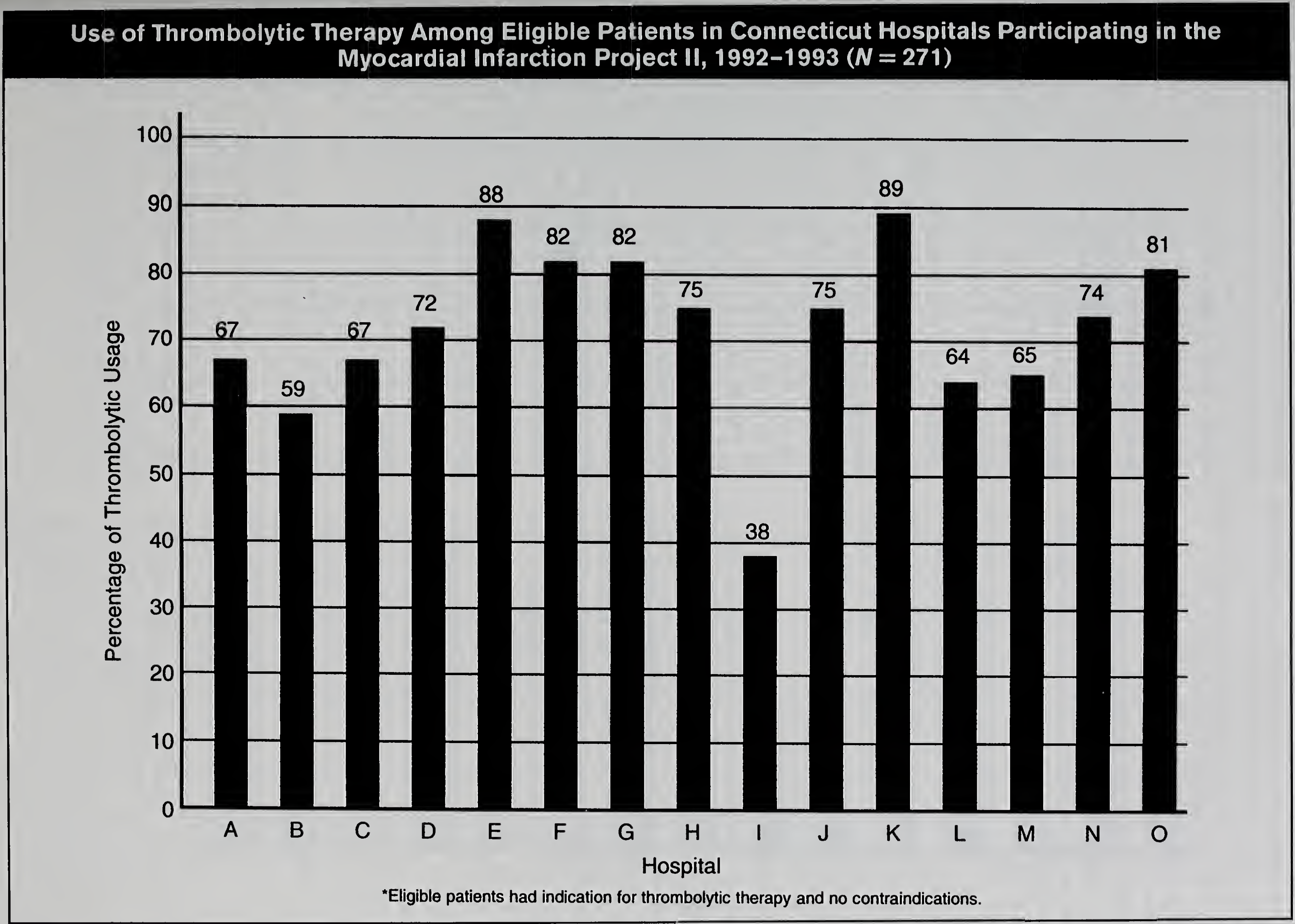
Hospital	CV Peer Group	Cases *N*	Indications *N* (%)	Contraindications *N* (%)	Eligible Patients* *N* (%)	Use in Eligible Patients *N* (%)	Mean Time for Eligible Patients (minutes)	Use in All Patients *N* (%)	Mean Time for All Patients (minutes)
A	I	53	13 (24.5)	9 (17.0)	12 (22.6)	8 (66.7)	51	14 (26.4)	61
B	I	137	43 (31.4)	34 (24.8)	32 (23.4)	19 (59.4)	81	34 (24.8)	120
C	I	52	14 (26.9)	16 (30.8)	9 (17.3)	6 (66.7)	127	15 (28.9)	109
D	I	93	27 (29.0)	11 (11.8)	25 (26.9)	18 (72.0)	56	32 (34.4)	82
E	I	50	9 (18.0)	12 (24.0)	8 (16.0)	7 (87.5)	41	13 (26.0)	58
F	II	139	21 (15.1)	30 (21.6)	17 (12.2)	14 (82.4)	123	35 (25.2)	156
G	II	68	23 (33.8)	14 (20.6)	17 (25.0)	14 (82.4)	100	24 (35.3)	130
H	II	112	36 (32.1)	25 (22.3)	28 (25.0)	21 (75.0)	58	47 (42.0)	94
I	II	50	15 (30.0)	12 (24.0)	13 (26.0)	5 (38.5)	30	6 (12.0)	39
J	II	48	16 (33.3)	14 (29.2)	12 (25.0)	9 (75.0)	73	14 (29.2)	133
K	III	51	11 (21.6)	13 (25.5)	9 (17.7)	8 (88.9)	56	13 (25.5)	128
L	III	52	15 (28.9)	15 (28.9)	14 (26.9)	9 (64.3)	50	14 (26.9)	70
M	III	86	26 (30.2)	20 (23.3)	23 (26.7)	15 (65.2)	56	21 (24.4)	81
N	III	118	44 (37.3)	32 (27.1)	31 (26.3)	23 (74.2)	68	37 (31.4)	149
O	III	93	31 (33.3)	28 (30.1)	21 (22.6)	17 (81.0)	57	34 (36.6)	71
Total	—	**1,202**	**344 (28.6)**	**285 (23.7)**	**271 (22.5)**	**193 (71.2)**	**70**	**353 (29.4)**	**106**

CV = cardiovascular – peer groups: I, hospitals with capacity for angiography, angioplasty, and bypass surgery; II, hospitals with capacity for angiography but not angioplasty or bypass surgery; III, hospitals with no capacity for angiography, angioplasty, or bypass surgery.
*Eligible patients had indications for thrombolytic therapy and no contraindications.

Figure 1 illustrates thrombolytic usage rates among eligible patients at each hospital; these rates ranged from 38.5% to 88.9%. Figure 2 illustrates mean time to thrombolytic administration among all patients at each hospital. These times varied from 39 to 156 minutes. Table 4 lists barriers to timely administration of thrombolytic therapy that have been cited in the medical literature[10-11] and hospital policies in place to address these barriers. Results of this assessment revealed that three policies had already been widely implemented (thrombolytic storage and administration in the emergency department (ED) and empowerment of ED physicians), while one policy (standing orders) had been put into place less commonly.

Table 4.—Delay Factors and Hospital Policies Affecting Thrombolytic Therapy Use and Timing, Myocardial Infarction Project II, 1992-1993 (15 Hospitals)

Factors Causing Delays in Thrombolytic Administration	Hospital Policies to Alleviate Delays	Frequency of Policies (Number of Hospitals)
1. Transportation of patients to an intensive care unit	1. Thrombolytics administered in emergency department	15
2. Transportation of medication from pharmacy	2. Thrombolytics stored in emergency department	14
3. Mandatory cardiology review of case prior to administration of therapy	3. Empowerment of noncardiologists to administer thrombolytics	10
4. Administrative and ancillary task completion	4. Standing orders employed in emergency department	5


Use of Thrombolytic Therapy Among Eligible Patients in Connecticut Hospitals Participating in the Myocardial Infarction Project II, 1992–1993 ($N = 271$)

*Eligible patients had indication for thrombolytic therapy and no contraindications.

Figure 1.—Hospitals A–E represent institutions with full invasive cardiovascular (CV) services; hospitals F–J represent institutions with partial invasive CV services; and hospitals K–O represent institutions with no invasive CV services. Eligible patients had indication for thrombolytic therapy and no contraindications.

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Hospital Use of Data

All participating hospitals targeted processes of care for improvement on the basis of their performance (for example, underutilization of particular therapies or long delays). The most frequently selected areas were

- thrombolytic usage and timing (14 hospitals);
- initial and discharge use of aspirin (12 hospitals); and
- discharge use of beta blockers (11 hospitals).

Each hospital then implemented improvement interventions and all are presently collecting follow-up data. Preliminary analysis of these data indicate that improvements have indeed occurred. For example, seven hospitals have reported decreasing their door-to-needle time for thrombolytic therapy to less than 45 minutes, and several hospitals have reported increasing their usage rates of thrombolytics, aspirin, and beta blockers to more than 90% among eligible patients. Although these improvements cannot be attributed solely to MIP II, hospital representatives agree that the project played a key role. Descriptions of how three hospitals made use of the MIP II data to improve AMI care follow.

Use of the MIP II Data at Three Hospitals

Hospital E.—After this large teaching hospital offering full invasive cardiovascular services received the MIP II report from CPRO, several hospital groups were convened to review the data and to determine if there were opportunities for improvement. The groups included the attending and resident physicians of the department of medicine, the attending staffs of the departments of family practice and emergency medicine, the quality coordinating committee, and the pharmacy and therapeutics committee. It was decided that aspirin and beta blocker use should be increased among eligible patients and that inappropriate use of calcium channel blockers should be decreased.

The groups then reviewed the hospital's policies and procedures for AMI treatment. Surprisingly, it was discovered that five sets of standing orders were in existence for different aspects of ischemia heart disease: chest pain, unstable angina, myocardial infarction, thrombolytic therapy, and general ischemic heart disease. Although each set of standing orders was individually sound, there was great overlap, resulting in confusion among the staff. It was decided that a single set of standing orders would be created which would have branching logic leading to different groups of orders for each aspect of ischemic heart disease. In addition, it was decided that an AMI critical pathway would be developed to standardize practice and to ensure that appropriate therapies were always considered. A multidisciplinary panel was assembled, and by the end of 1995 an AMI pathway was developed and implemented.

Subsequent drug utilization in AMI patients has been tracked in two ways: first, by collecting variance data from the AMI pathway, and second, by combining data from the hospital's billing system with computerized pharmacy records. Trends in the use of aspirin, beta blockers, and calcium channel blockers have been tracked and presented to the departments of medicine and family practice, the division of cardiology, the pharmacy and therapeutics committee, and the performance improvement committee. In addition, the data have been published in a monthly pharmacy and therapeutics newsletter that is distributed to all physicians. Hospital E reports "a small but favorable trend" toward increased use of aspirin and beta blockers and decreased use of calcium channel blockers through early 1996.

Hospital C.—Before participating in MIP II, Hospital C, also a large teaching hospital offering full invasive cardiovascular services, had already instituted recurrent evaluations of key processes of AMI care. In late 1993 it created a joint cardiology-emergency medicine task force to improve the delivery of thrombolytic therapy in patients with AMI. This task force reviewed the MIP II report and the hospital's internal data on patients presenting to the ED with chest pain. It was noted that fewer than one-half of eligible patients were receiving thrombolytics and that those who did were experiencing long door-to-needle times. To better understand how the initial evaluation and treatment of AMI patients was occurring, the task force proceeded to flowchart the process. Several causes for delay or nonuse of thrombolytic therapy became clear. First, it was discovered that performance of initial electrocardiographs (EKGs) in patients with chest pain was often delayed because technicians were not immediately available in the ED. A second delay occurred because thrombolytics were not stored in the ED and therefore had to be transported from the pharmacy for each case. Finally, it was determined that a major barrier to increased thrombolytic use was a concern on the part of ED physicians that they would be "second guessed" by the hospital cardiologists if they decided to use the therapy and patient outcomes were less than optimal.

The task force devised the following focused interventions. First, nurses working in the ED were trained to perform EKGs and were made responsible for obtaining the initial cardiograms. Next, thrombolytic agents and other adjunct medications (for example, aspirin, heparin, and nitroglycerin), were stored in the ED, thus eliminating the need for transport. Finally, practice protocols were developed jointly by the ED and the division of cardiology. These protocols identified which patients were eligible for the therapy and which thrombolytic agents were to be used.

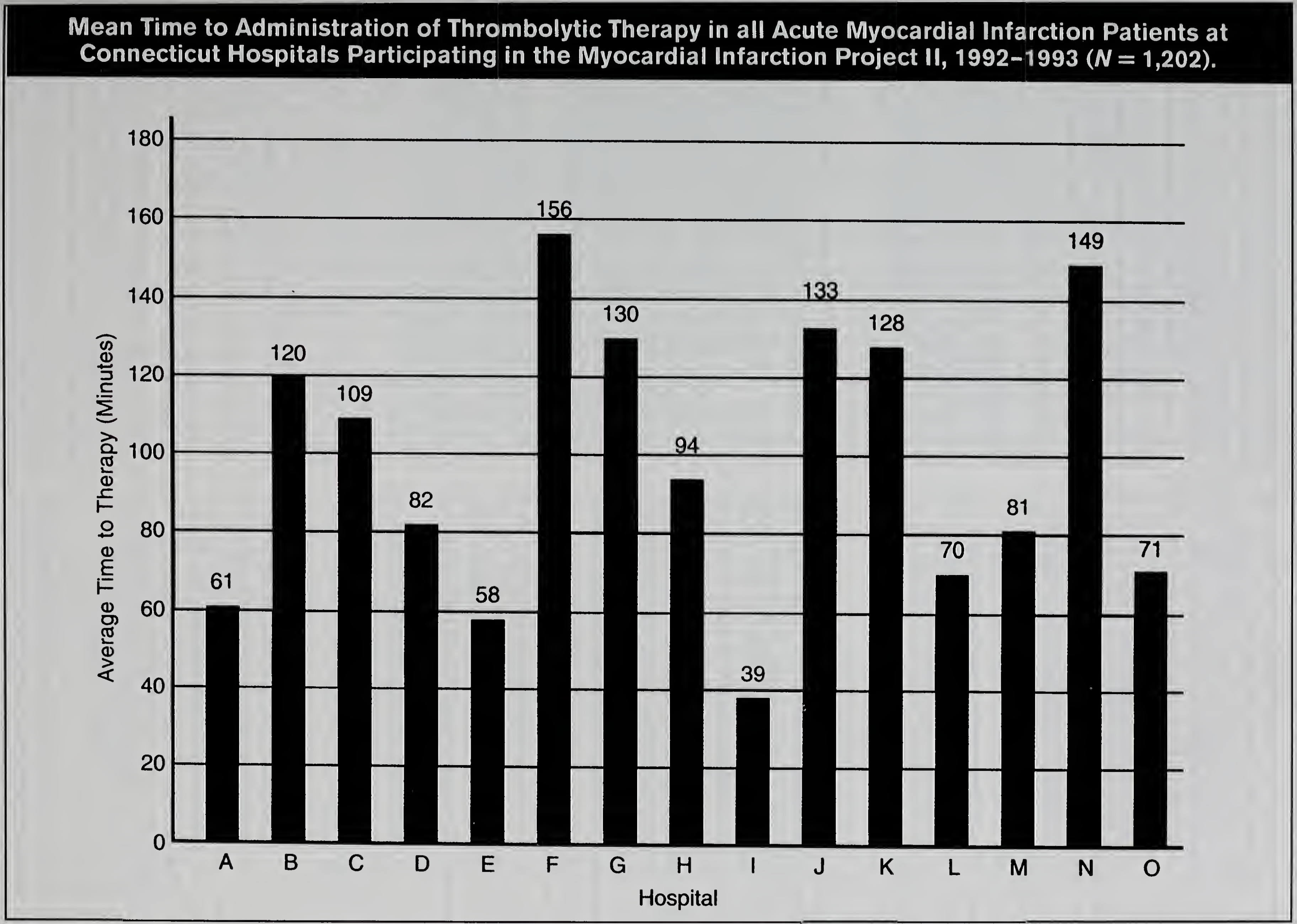

Figure 2.—Hospitals A–E represent institutions with full invasive cardiovascular (CV) services; hospitals F–J represent institutions with partial invasive CV services; and hospitals K–O represent institutions with no invasive CV services.

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Since implementing these interventions Hospital C has continued to track utilization of thrombolytic therapy and time to administration. These data are reviewed quarterly by a multidisciplinary ED quality council. Standards have been set for each component of the care process (for example, a door-to-data EKG time of ≤ 12 minutes), and variances have been tracked. Through the use of flow charting and other standard QI tools, this process of AMI care has come to be well understood and significant improvements have been realized. Since initiating these interventions, Hospital C reports decreases in mean door-to-needle times from 109 to 32 minutes and in in-hospital AMI mortality from 13.4% to 8.9%.

Hospital B.—A large tertiary care hospital with full invasive cardiovascular services, Hospital B reported that participation in MIP II heightened the organization's interest in benchmarking cardiovascular processes and outcomes of care. As a result, multiple interventions were devised to streamline cardiac services.

First, the organization hierarchy was modified from a traditional departmental framework to a system organized along product lines. Cardiac services, cardiologists, and cardiovascular surgeons were reorganized into a heart institute with accountability directed to an advisory board.

Second, interdisciplinary teams were charged with developing disease- or procedure-specific critical pathways and with tracking production, fiscal, and clinical outcomes. The teams were empowered to design and implement processes to ensure clinical and financial success. Each team was led by a physician within the heart institute; team members included primary-care physicians, nurses, ED providers, catheterization laboratory staff, dietitians, pharmacists, administrators, and other personnel. A particular focus was the initial evaluation and treatment of patients presenting to the ED with chest pain and development of an AMI critical pathway.

Third, the interdisciplinary team for AMI was charged with tracking and modifying individual practitioner behavior. This group was instructed to report its progress to the advisory board.

Fourth, a division of outcomes management was developed within the hospital's heart institute to track clinical results, fiscal status, long-term patient health status, and customer satisfaction throughout the cardiac product line. A full-time academic cardiologist was named director of outcomes management. Computer hardware and software were purchased to develop a confidential patient database for all diagnostic and therapeutic encounters. A secure system was also selected for collection of physician-specific information.

Fifth, delivery of critical care services was redesigned. The organization developed a plan to combine all critical care for cardiac patients within one cardiac intensive care unit. Postoperative cardiac surgical patients would be managed in the same cardiac intensive care unit as medical cardiac patients. One medical director and nurse manager were named for the new unit and new facilities were constructed under a general hospital building campaign.

Finally, consolidation of intermediate cardiac care services was planned, placing care of late postoperative cardiac surgical patients and intermediate medical cardiac patients under management of one medical director and nurse manager. The majority of this care would be delivered by teams of cardiologists and cardiac surgeons working in concert with mid-level practitioners such as advanced practice registered nurses and physician assistants.

These efforts developed during a two-year period. Hospital B reports that some of these changes were relatively easy to implement, whereas others were more challenging. Follow-up data on processes and outcomes of care are now being collected.

Strengths and Weaknesses of the Collaboration

Communication with HCFA and among other PROs indicates that the MIP II model of collaborative QI has become a standard among PROs and hospitals under HCFA's Health Care Quality Improvement Program. This model capitalizes on the PROs' experience in medical record abstraction, data analysis, and feedback, and the experience of hospitals and clinicians in providing care to patients. PROs, as impartial QI organizations, are well positioned to convene local panels of clinicians and hospital representatives to work together on focused QI projects.

Providers are motivated to participate in such efforts for several reasons. First, by collaborating, hospitals are able to have access to high-quality comparison data for benchmarking important processes and outcomes of care. Next, by documenting participation in such QI projects, hospitals are able to demonstrate compliance with a Joint Commission on Accreditation of Healthcare Organizations (Oakbrook Terrace, IL) requirement to utilize external comparison data in their QI programs.[12] Finally, even in the current competitive environment of health care, clinicians have demonstrated a willingness to work with counterparts from other organizations to gain new perspectives on how to better deliver care to patients.[13]

This model of PRO-hospital collaboration is not without flaws. Retrospective chart abstraction is an imperfect method of data collection, and variability may be introduced into the process by using hospital abstractors rather than PRO staff. On the other hand, standardized training of hospital abstracters should increase the reliability of hospital data collection for all hospital QI projects. Small case numbers will always be a problem for some providers and waiting for additional cases to accumulate will make data less current. Finally, there are multiple potential confounders to QI efforts; that is, improvements in care may result from other factors that are active at the same time as the QI interventions. Some of these include rapid changes in medical knowledge and technology and evolving reimbursement arrangements. Ironically, improvements in AMI care attributable to MIP II may have been confounded by CPRO's participation in the pilot phase of Medicare's national AMI improvement effort, the Cooperative Cardiovascular Project.[14]

Conclusion

We have described a model of collaborative QI between a PRO and 15 hospitals which included sharing of resources to generate a database on AMI care. Using this database, hospitals have devised focused QI interventions based on their unique care profiles. Follow-up data collected by the hospitals indicate that improvements are occurring. In the future, CPRO will provide an independent validation of these improvements by abstracting a sample of AMI records at all MIP II hospitals.

Although documented improvements in processes and outcomes of care will be the ultimate measure of MIP II success, hospital participation in similarly designed QI projects on other topics is an interim sign that MIP II was perceived as valuable. In fact, 23 hospitals are now collaborating with CPRO on a similarly designed QI project aimed at improving the care of patients hospitalized with atrial fibrillation. This project has gone beyond the MIP II model of informal networking as a means of communicating QI interventions by including formal presentations by the hospitals in which actual critical pathways, standing orders, and implementation strategies are presented.

In future QI projects CPRO and its collaborators hope to learn how specific hospital and physician characteristics influence improvement interventions and to bring this knowledge to bear in devising focused hospital-specific interventions.

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Appendix: Myocardial Infarction Project II Steering Committee

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"Extraordinarily Interesting and Happy Years": Martha M. Eliot and Pediatrics at Yale, 1921-1935

MARION HUNT

AS the century draws to an end, women's acceptance at medical schools that once excluded or marginalized them seems complete. Harvard, Yale, and Johns Hopkins now report a majority of women students in their entering classes. Harvard Medical School, which persisted in denying women admission until 1945 (long after most institutions had accepted them), celebrated the fiftieth anniversary of this innovation.[1] But even Johns Hopkins, which had pioneered women's admission in 1894, did so only because female philanthropists gave a large gift with the proviso that their admission be required.[2] Despite recent progress in overcoming barriers, women's welcome to medicine has seldom been warm and remains chilly to this day in certain specialties, as Dr. Frances Conley's widely reported revelations about the hostile climate in Stanford's Department of Neurosurgery showed.[3]

Regardless of women's ability, for most of this century they were routinely denied internships, appointments, promotions, and employment. Only during the last 30 years has the potent combination of activism and civil rights legislation allowed women (and African-Americans) access to opportunities that white men always enjoyed. Dramatic shifts in medical school admission patterns reflect this change. In 1968, 47% of African-American students entering medical school were enrolled in predominantly white institutions; by 1990, the figure had increased to 84%.[4] The number of women entering medical school grew "abruptly" after 1970, increasing from 9% that year to 38% by 1990.[5] The first generation of women to benefit from this change is now reaching professional maturity. Though few have attained major administrative power, some occupy high positions.

Considering the harsh prejudice against women in academic medicine, the presence of Dr. Martha Eliot and other female physicians in Yale's Department of Pediatrics between 1921 and 1935 is remarkable. This unusual cluster of feminine excellence resulted from mutual respect between gifted women and fair-minded men in powerful positions. Under the leadership of Dr. Edwards Park and his successor Dr. Grover Powers, Eliot and her colleagues were treated as valuable members of the faculty. In an age of discrimination against women, this enlightened policy was rare.

In 1976, at the age of 85, Eliot gave 20 interviews to the Schlesinger Library of Women's History at Radcliffe College.[6] Despite a long and distinguished career garlanded with honors and awards, she always regarded her New Haven years with particular affection: "Those years of mine at Yale—I was there for 14 years—were extraordinarily interesting and happy."[7] Eliot's success in health care policy and advocacy is rooted in this crucial period. Examining such a formative time offers insights into her professional transformation from private pediatrician to an effective public servant. Edwards Park, the first full-time head of pediatrics at Yale, was a key figure in her career. From 1921 to 1927, he established an intellectual climate where bright young pediatricians flourished.[8] Park and his successor Grover Powers each headed the department for seven of Eliot's 14-year tenure. Both men understood and supported the social aspects of their specialty.

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This broad vision of pediatrics, which linked clinical and research findings to public health issues, attracted Martha Eliot as a medical student and sustained her entire career. Nationally recognized for her influence on pediatrics and child health care policy, Eliot's enduring contribution rests on two achievements. The first was collaboration with Edwards Park on a community-based research program to eliminate rickets, then a major disease affecting youngsters. In 1923, they launched a three-year prospective study to determine whether childhood rickets could be prevented by giving cod-liver oil and sunbaths to infants. This study established vitamin D requirements, limits of tolerance, and the best means to insure that babies received the necessary dosage. In her 1926 article, based on the paper she read before the American Medical Association's Section on Diseases of Children in May of 1925, Eliot described designing a large demonstration project that included a staff of three doctors, two social investigators, an x-ray technician, and a secretary. She chose a New Haven district with an ethnically and racially mixed population of 13,500. Babies born within the study's first two years were examined and given a regime of cod-liver oil and sunbaths. To find early symptoms of rickets, they also received home visits, physical examinations, and radiographs of their forearms. Eliot advocated maternal education: "the importance of teaching the mother ... cannot be overemphasized," she wrote.[9] As Dr. Mary Ellen Avery, the first woman head of pediatrics at Harvard, noted in a 1979 lecture honoring Eliot and her former Yale colleague Dr. Ethel Dunham: "This single controlled prospective trial ... was so well done, and so widely accepted, that the stage was set for the gradual elimination of the disease."[10] Eliot's second achievement was her work in developing child health care policy. Her Yale years provided the opportunity and experience that served as the foundation for this success. In 1924, while an Assistant Clinical Professor of Pediatrics, Eliot agreed to direct the Children's Bureau Division of Maternal and Child Health. Parks' support of this venture was crucial. He had certainly foreseen the possibilities of cooperation between his department and this agency.

Park's regard for Martha Eliot was so high that in 1920 before coming to Yale, he had invited her to be chief resident. Within two years, they began Children's Bureau-sponsored research on rickets. Established in 1912 largely through pressure from prominent women reformers, the Bureau's mission was to investigate all matters pertaining to child welfare and child life. Under the leadership of Julia Lathrop (a friend of Jane Addams) and a small staff, the Bureau first surveyed rates of infant morbidity and mortality. Women physicians and social workers did much of this work. The results, showing high rates of death and disease among the poor, led to an interest in prevention. Thus, the agency supported maternal education, published popular feeding manuals, organized campaigns for birth registration, and clinics for child health supervision. Once women gained the vote in 1920, they pressed for passage of the 1921 Sheppard-Towner Maternity and Infancy Act, a first effort at federally-sponsored social welfare. Through it, the Children's Bureau obtained real power in the public health arena. This legislation funded grants to states for prenatal clinics, infant welfare stations, and child hygiene divisions. By 1929, when Congress allowed the Act to expire, millions of mothers and children had benefited from this legislation.[11]

Martha Eliot's activist vision of pediatrics suited the Bureau's mission. With the approval from Park and later from Powers, she combined a Yale faculty position with consulting work for the agency. In 1934, she participated in drafting Title V of the Social Security Act, which revived the maternal and child health measures that Sheppard-Towner had encouraged during the 1920s. To implement this new legislation, Eliot decided to take a full-time position as the Bureau's assistant chief in 1935. Her colleagues hoped she'd be chosen to lead the agency whose heads had traditionally been social workers. Grover Powers remarked, "Dr. Eliot has the fullest qualifications ... her appointment would be a matter of satisfaction to the medical profession as well as of pride to the Department of Pediatrics of the Yale Medical School."[12] She accepted the second-ranking post as assistant chief because it gave her sufficient administrative leverage to improve child health. Every aspect of her experience, and especially her years in New Haven, had prepared her for this new challenge.

Important changes in pediatrics had prepared the way for progress at Yale. The specialty had developed in nineteenth century charitable children's hospitals. After 1900, the field entered a new phase of intellectual growth. Leading professors campaigned for pediatrics, then a subdivision of medicine or obstetrics, to attain departmental status. Full-time academic departments were essential to attract and train students, develop research, and provide innovative patient care. Crucial to the specialty's legitimacy was a new breed of academic pediatrician with solid research ability.[13] In Edwards Park, Yale chose just such a man.

More than luck was involved in this choice. According to Grover Powers, Yale's new dean, Dr. Milton Winternitz "was deeply and effectively interested in pediatrics and held that it should be one of the major disciplines of clinical medicine—not, as was often the case at that time, a subsidiary division of Midwivery (sic) or Internal Medicine."[14] After a year's negotiations with Winternitz, a former Hopkins colleague, Park began work as head of pediatrics on 1 July 1921. He began building the new

Figure 1. Martha M. Eliot. (Photo courtesy of the Yale School of Medicine Historical Library.)

department at once. Early in their collaboration, Winternitz and Park successfully sought funds from the Rockefeller-sponsored General Education Board for construction of a laboratory and clinical service. By offering Martha Eliot the chief residency, Parks began to build the department even before he officially took the position as its head.

She was superbly qualified for the job. Born in 1891 to a prominent Boston family, Eliot graduated from Radcliffe College in 1913. Next, she spent a year as an assistant in the Social Service Department at Massachusetts General Hospital. This experience solidified her interest in the social aspects of medicine, but friends hoped to discourage her from entering the profession. In 1954, when she received the American Public Health Association's William T. Sedgwick medal, Eliot recalled her only meeting with the famous MIT professor of sanitary science. He suggested that she consider work in bacteriology. When she asked what advice he'd give a young man with her interests, Sedgwick replied, "I would advise him to study medicine, to get as good a grounding as possible in what disease does to man, and then … learn how to prevent those diseases." When Eliot told him her medical school plans, he encouraged her to proceed.[15] Though Harvard Medical School was still closed to women, Eliot made a point of applying there as a matter of principle before she entered Johns Hopkins. She graduated in 1918 and then faced the pervasive discrimination against women in postgraduate training.

Even with this excellent credential, significant professional barriers remained in her path. She had wanted to do a pediatric internship at Hopkins, but Dr. John Howland, the department head, refused to consider her.[16] Despite a commitment to educate women physicians, the medical school faculty felt little responsibility for their training or employment. In 1902, Dr. Dorothy Reed, also a Hopkins graduate, experienced Dr. William Welch's withering response to her request for an academic appointment. She had completed a two-year fellowship in his laboratory doing excellent research that established Hodgkin's disease as a distinct disorder characterized by a specific cell that bears her name. In a memoir she recalled, "He answered that no woman had ever held a teaching position in the School and that he knew there would be great opposition . . . Suddenly, as I saw what I had to face in acceptance of injustice in being overlooked—I knew I couldn't take it."[17] Instead, she developed a lifelong interest in maternal and child health, eventually becoming a medical officer for the Children's Bureau. John Howland's response to Martha Eliot 16 years later showed that women's opportunities at Hopkins had not improved.

After serving as a junior intern at Bellevue Hospital, the wartime shortage of male doctors enabled Eliot to obtain a medical internship at the new Peter Bent Brigham Hospital. Next, she applied for an assistant pediatric residency at the recently reorganized St. Louis Children's Hospital. Park, who had known Eliot as a medical student, encouraged this idea because his former Hopkins colleague, McKim Marriott, then headed pediatrics at Washington University.[18] An additional factor in Eliot's decision was a strong family tie to St. Louis. Her grandfather had been first chancellor of Washington University, and her father had grown up there. Eliot's childhood was a major influence on her career. As close colleague Dr.William Schmidt remarked in a memorial address, "Her entire career was a fulfillment of a decision and commitment made early in her life."[19] Despite a privileged background, Eliot confronted poverty at an early age:

> I must have been a headstrong child … one of my earliest memories is of running away from my family in a fit of anger when I was three years old. My father's church was in the West End of Boston … between our house and the church there were 23 saloons. and there wasn't much of the seamy side of life that we didn't observe. Our introduction to the urban poor was early and natural.[20]

This deep social concern would shape her entire career.

Founded by women in 1879, the newly rebuilt teaching hospital in St. Louis was well-equipped, and progressive.[21] Though a biochemist by training, Marriott accepted

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Figure 2. Edwards A. Park, Chairman of the Department of Pediatrics, Yale School of Medicine, 1920-1927. (Photo courtesy of the Yale School of Medicine Historical Library.)

the value of a social approach to pediatrics. Work in a municipal child welfare clinic was part of Eliot's training. During the winter of 1920, she wrote: "This is pretty confidential. Dr. Marriott has asked me whether I would not stay on another year with, of course, a better job. ..."[22] But by June, his offer had become less attractive:

> I have had quite a talk with Dr. Marriott about next year, and it is evident that he doesn't want a woman as resident. He constantly evaded the question, but was very cordial about my coming back to do any kind of research work I might desire. He thinks I would do very well to go to New Haven, depending considerably on what new men the Yale School calls as professors of medicine or pediatrics. ...[23]

The following month she wrote:

> Much to my surprise and irritation, the unexpected happened yesterday, and Dr. Marriott asked me what kind of job I would like in order to keep me in St. Louis next year. He practically said he would give me anything I want which was flattering but irritating because he could have come across with the proposition sooner....[24]

These candid comments show Eliot's annoyance at her vulnerability in a profession that discriminated against women even when they excelled. Such prejudice in powerful men would deprive women of opportunities for many years to come.

In September of 1920, Eliot returned to Boston and opened an office, sending out notices that her practice would be one "in the prevention and treatment of diseases of children." This unusual wording revealed her basic approach to pediatrics. As she explained, "During my training, I realized that many of the children who entered hospitals because they were sick could well have had many of their ... diseases prevented if there had been a better provision of clinics and services."[25] Her temperament and professional interests were ill-suited to the entrepreneurial concerns of private practice. More than fifty years later, Eliot recalled a letter from a senior colleague suggesting that her fees be set in keeping with those of other pediatricians— an offensive idea to her. She began private practice with little enthusiasm. Fortunately, two months later, Edwards Park, who had remembered Eliot's promise as a medical student, invited her to join him in New Haven. Even in old age, as the interview transcript indicates, her memory of that joyous moment remained vivid: "I was so excited ... I sat down that evening and wrote him a letter accepting immediately."[26]

She was to start her new job in September, so Eliot finished her 10 months as a solo practitioner with relief. In contrast to the difficulties she had suffered with Dr. Marriott, Eliot, and Park enjoyed a clear understanding from the start. In addition to the chief residency, he gave her an instructorship in pediatrics. Eliot's colleagues in the department included an unusually high number of women who became leaders in the field. Park's willingness to hire competent women when most of his peers ignored them shows that he possessed both a sense of fairness and a discerning eye for quality. His successor, Grover Powers, maintained this tradition. Among the outstanding women who joined the department were child psychiatrist Marion Putnam, later a professor at Harvard, and Edith Jackson, a leader in family-centered maternity care.[27]

Most important to Eliot was Ethel Dunham, who had arrived in New Haven the year before she did. Born in 1883 to a wealthy Hartford family, she completed her education at Miss Porter's School in 1901. At the age of 26, after several years of travel and volunteer work, Dunham returned to high school to complete a physics course that would prepare her for admission to Bryn Mawr in 1910. After completing premedical studies there, she entered Johns Hopkins and graduated in 1918. Dunham was among the few women John Howland ever permitted to enter his pediatric residency program. In 1919, while Eliot worked in St. Louis, Dunham became the first woman house officer at the New Haven Hospital.[28] "We are determined to be in the same place next year if it is a possible thing," wrote Eliot in a letter home.[29] In 1920, Dunham was appointed instructor in pediatrics and gave lectures in pediatrics to medical students. As an assistant professor, she assumed responsibility for the outpatient department and newborn nursery. Among her innovations was a car that permitted interns to visit newborn infants in their homes. Eliot and Dunham enjoyed a lifelong partnership complimented by their distinguished careers in pediatrics and public health.

They were the first women to receive American Pediatric Society's highest honor, the John Howland Award (Dunham in 1958 and Eliot in 1967). Named for the professor who had been their teacher at Hopkins, the prize honored his pioneering research on infant dehydration. Howland's other great success had been to create the first full-time department of pediatrics in the country. A Yale graduate and intercollegiate tennis champion, his desire for a thorough grounding in medicine was so strong that he received two medical degrees. Widely admired for his brilliance, Howland was also feared for his abrasive personality, sarcastic wit, and dislike of women. As one of his former interns recalled, "he never approved of women doctors ... and he always had difficulty with nurses."[30]

Winning an award named for Howland was a delicate matter for Ethel Dunham and Martha Eliot. The way each of them crafted her acceptance speech reveals a telling difference in style and viewpoint. Dunham graciously acknowledged Howland's influence on her career and discussed the future of research on prematurity.[31] Eliot's speech was more candid. She included autobiography and professional history to contrast her vision of pediatrics with Howland's views of the specialty.

First, Eliot discussed his decision to banish the child welfare aspects of pediatrics from his Hopkins clinics, concentrating on clinical work and laboratory investigation to enhance its status as a scientific specialty. "In view of the status of pediatric education in 1912, his decision was no doubt right," Eliot declared.[32] This division between pediatrics' social and scientific side had haunted the field for years and would do so for many years to come. In 1914, Dr. Samuel Hammill, president of the American Pediatric Society, had criticized colleagues for their refusal to take any position on social reforms affecting children's lives, such as child labor: "The pediatrist has withheld his assistance and influence so long that the lay organizations have learned to do without him."[33]

Eliot never believed in separating children's clinical and social problems. In her view, many diseases afflicting the young were intimately related to the social conditions in which they lived. Despite this disagreement with Howland, she respected him and wanted to train in his department. At the award ceremony she recalled, "Dr. Howland gave me short shrift. I was flatly and promptly turned down because, as he frankly said, it would be such a waste to give one of his few posts to a woman who would, no doubt be married and lost to pediatrics within a year! This was just as well, I am sure, for my lines lay in different directions...."[34] This rejection, and the realization that she had a broader view of pediatrics, led Eliot to seek training where social factors were considered relevant to children's health. The departments of pediatrics at Washington University and at Yale were such places. With gentle irony, she noted the fact that Howland had appointed Grover Powers to direct the Hopkins dispensary, "Little did he dream ... that he had in the making a pediatrician who, in his long career at Yale, would make the most profound impact on the development ... of the social welfare aspects of pediatrics."[35] Powers himself credited Park with restoring a balance between clinical and social factors that Howland had dismissed at Hopkins. He wrote, "The highlight of Dr. Park's service to pediatrics while at Yale lay in the fine quality not only of the scientific study of disease but in the emphasis on the broad implications, social relationships, and public health correlations of child care."[36]

Figure 3. Grover F. Powers, Chairman of the Department of Pediatrics, Yale School of Medicine, 1927-1952. (Photo courtesy of the Yale School of Medicine Historical Library.)

In closing, Eliot reminded pediatricians of their five and a half decades of advice to the Children's Bureau, referring to it as "the laboratory and base of action in which and for which I have worked for more than forty years."[37] This pointed reference underlined her belief in the importance of public health research to pediatrics and the importance of the Children's Bureau to child welfare. Both Eliot and

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Dunham had done their Howland Award-winning research on clinical problems whose social implications they understood clearly. Dunham's pioneering work focused on the care of premature babies. Like Eliot, she took a part-time consultancy with the Children's Bureau while a member of the Yale pediatrics faculty. By becoming a medical officer in charge of neonatal studies, she gained a national overview of prematurity. When Eliot left Yale for a full-time Children's Bureau post, Dunham became head of its research division in child development. At Yale, where Grover Powers had succeeded Edwards Park in 1927, pediatrics continued to flourish. Martha Eliot said of them simply, "Both these men were great teachers."[38]

The friendship between Eliot and Powers continued after she left New Haven for the Children's Bureau. In 1944, angry doctors, fearful of "socialized medicine," attacked Eliot and the agency she served. In response to a national need, she had released agency funds to help soldiers' wives with their maternity and pediatric expenses. Next, she developed the Emergency Maternal and Infant Care program, which gave free medical service to military dependents. Doctors' objections centered on the lack of means testing as well as payment formulas. So inflamed was the situation that there was discussion of the American Academy of Pediatrics withdrawing its support from the agency. In a letter to the *Journal of Pediatrics* in September of 1944, Powers "vigorously defended the Bureau."[39] His personal prestige was sufficient to quiet the harshest voices and make others reconsider their position. Even so, Eliot had to face her colleagues' considerable hostility. Thirty years later, she recalled "a very interesting little episode" at the 1944 American Academy of Pediatrics meeting when fellow pediatricians ostracized her.[40] This cool observation, minimizing a nasty incident, revealed Eliot's temperament, which combined passionate commitment with political savvy and a sense of perspective. She realized the seriousness of the situation and called Dr. Henry Helmholz, a former president of the Academy who then chaired the Bureau's medical advisory committee. Through his good offices, Eliot sought a truce. Other loyal colleagues, Park among them, felt that those denouncing the Children's Bureau had no idea of how much the agency's activities had done to increase public demand for qualified pediatricians. Helmholz came up with the compromise mechanism of a project involving the Academy, the American Pediatric Society, and the Bureau in a large child health survey. All the concerned parties agreed to participate, and a major schism was avoided.[41]

In the postwar years, subspecialty development was increasingly important to pediatrics. This change began in the 1920s with the successful use of insulin and the organization of metabolism clinics.[42] For Martha Eliot and Ethel Dunham, the Children's Bureau always retained its importance as a vital conduit linking research directly to public health. Nor did they ever forget their formative experiences in New Haven. Dunham and Eliot kept their Yale appointments as associate clinical professors in pediatrics until 1950, returning at regular intervals to give lectures.

The more public personality of the two, Eliot received the Lasker Prize (usually given medical or scientific discoveries) in 1948 for outstanding administrative achievement. She then served as assistant director-general of the World Health Organization from 1949 to 1951 and chief of the Children's Bureau from 1951 to 1956. Nor did reaching retirement age slow her pace. At 66, Eliot accepted a position at Harvard as professor of maternal and child health. From 1959 to 1969, she chaired the Massachusetts State Commission on Children and Youth, a task she gave up at 80. "Retirement? I don't know what you mean by retirement" she said to a visitor three years later.[43] Martha Eliot died in 1978, leaving a brilliant legacy of achievement which today's child health advocates would do well to remember.

Mary Ellen Avery has commented perceptively that Martha Eliot and Ethel Dunham did more than important pediatric research; they publicized children's health problems, sought means to prevent them and worked for effective solutions—thereby practicing what she called "legislative medicine."[44] The flowering of their careers owed much to their fruitful years at Yale and the generous vision of pediatrics that Edwards Park and Grover Powers established in the Department's formative period.

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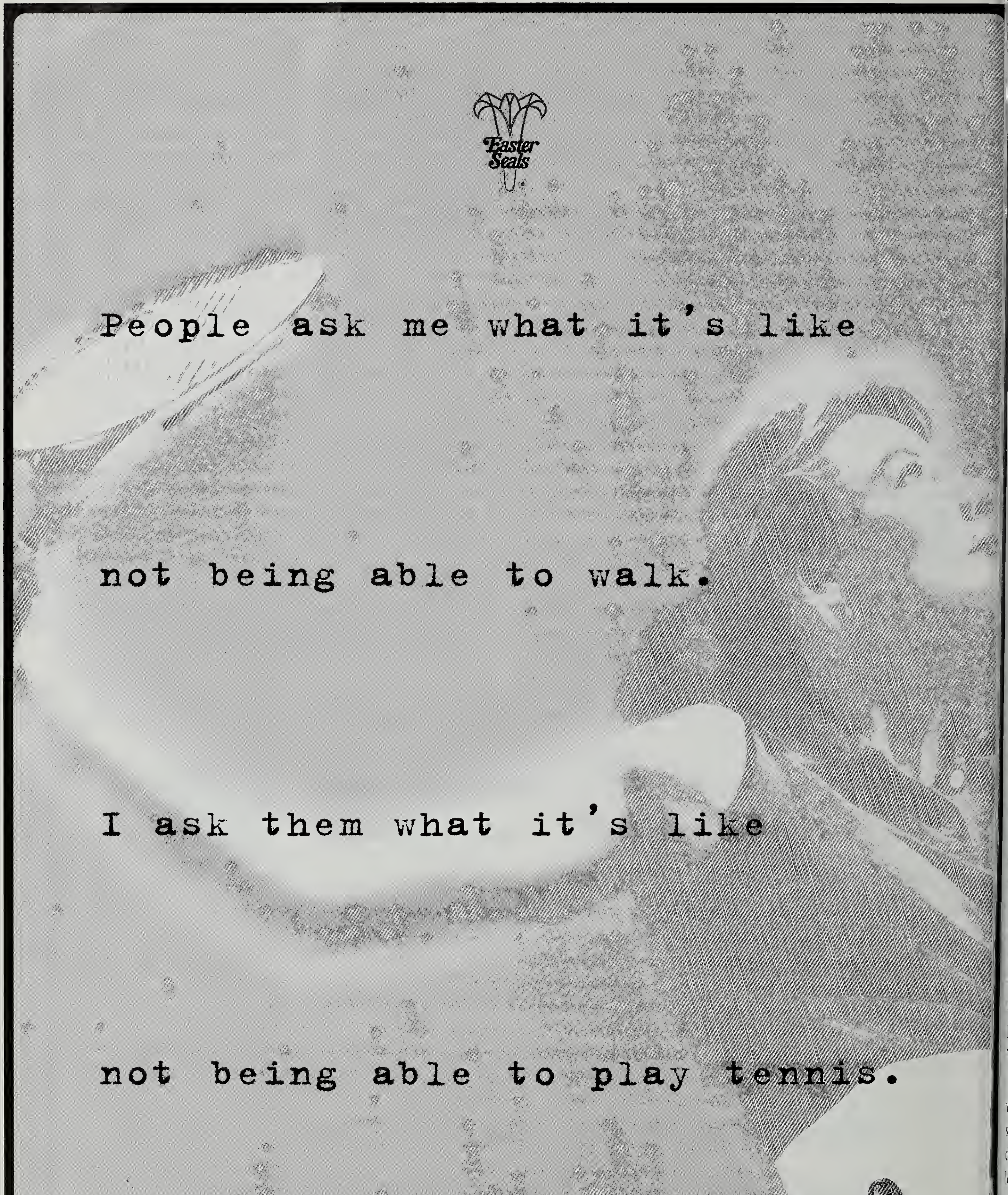
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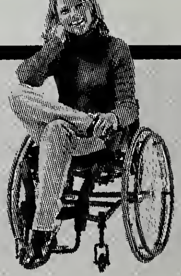

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ON BEING A PATIENT

Health Care in America: An Intimate Glimpse

BYRON FARWELL

I AM an obese 75-year-old man. I recently had a large cyst removed from my spine, along with some bits of bone for which the surgeon said I had no need. The surgeon, trained at the University of Pennsylvania and Harvard, had an impressive resume and came highly recommended. He was, in addition, a very likable fellow. He looked about 18 years old.

I had last had surgery 30 years earlier in Switzerland, where I had a large room with a window overlooking the Alps in a hospital that boasted a splendid wine cellar. The nurses, efficient and caring, even brought drinks for visitors. When I experienced a bit of postoperative trauma, the surgeon was at my bedside within minutes with a sizable glass of cognac. I speculated recently on how patients were now cared for, more than a quarter of a century later, in the United States, my native land. Rather differently, I discovered.

The operation itself, as far as I could tell, went very well. I had naively assumed that I would have a private room, but perhaps all of them were occupied; it was not offered as an option. I awoke to find myself on a narrow bed in a small room that I shared with another patient. A curtain separated me from my fellow sufferer, whom I never saw. He enjoyed the window overlooking the parking lot. I was able to note his television preferences, which were limited to cartoons and basketball. I also saw his many friends and relations of both sexes and all ages, who, perforce, had to squeeze past my bed to reach the toilet, of which they seem to have had frequent need.

The room was stuffy and uncomfortable. Although the weather was not inclement, the window remained fast shut; not a whiff of fresh air was admitted. In Britain during the mid-19th century, a scandal arose when it was learned that the standard for soldiers' barracks was only 800 cubic feet of air per man. I mentally tried to gauge the amount of air space available to me. Not that much, I reckoned.

My new habitat was a world of women: registered nurses, practical nurses, nurses' aides, student nurses, technicians, cleaning women, and women who brought and removed trays of food. Most of the nurses were saints. Certainly they were during my first night after surgery, when neither the do-it-yourself painkiller kit with which I was provided nor the shots of who-knows-what narcotic relieved my "discomfort"—the physician's word for excruciating pain. A brave nurse dared wake the surgeon at midnight, and the surgeon kindly increased the dosages of painkillers so that they eventually brought me relief.

The next day, my do-it-yourself painkiller was removed from me. When told what was to replace it, I expressed doubts to the nurse about its efficacy, for it had been tried before my operation without success. To my astonishment, she reacted as if I had personally insulted her. (Is the nurses' pension fund invested in a pharmaceutical company?) She roughly removed all the tubes from my wrist and slapped on a bandage. As she dismantled the gadget from which the bags hung, she said, "I'm not going to reinsert this." And with that she marched out.

Within minutes blood oozed from my wrist, then gushed. I rang for a nurse, but when no one responded, I hailed a nurse passing by in the hall. (There was, I discovered, an advantage in having a bed by the door rather than the window.) She grabbed a sheet, bound my wrist, and dispatched an aide to fetch proper bandages. She did her job efficiently and then cleaned up the bed, by now thoroughly blood soaked. A real saint. I do not know that my regular nurse was made aware of this incident.

Food at the hospital was provided by cooks who had failed to qualify as airline chefs. No salt was allowed, and the hospital appeared ignorant of salt substitutes. It scarcely mattered. The food was served tepid at best, arrived at odd hours, and always appeared unappetizing, except to the resident fly who seemed to find dried baked beans with a piece of desiccated turkey delicious. I ate only some fruit. No one noticed whether I ate or not. I suppose it was an added bonus if I lost a few pounds.

I was never cleaned up. When I felt well enough to clean myself, I requested a wash rag and hand towel. I thus

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managed to scrub off some of the dried blood and remnants of adhesive tape.

The major concern of the staff was to see that I urinated—or, to use the medical term favored by the nurses, "peed." Nurses propped me up beside the bed and held out a urinal, asking me if I could perform. Standing between two young women who watched carefully, I said I thought not. As I found myself unable to provide urine under any circumstance, a catheter was inserted in my penis. However uncomfortable and dignity-deflating this procedure seemed, it was done quickly and professionally. Such was not the case the second time.

It was hands-on day for the local nursing school, and fresh-faced young female students came to take my blood pressure, feel my pulse, and stick needles in my buttocks. I was no longer a mere patient but a warm body on which budding Florence Nightingales could practice. Any remnant of human dignity I possessed was shredded when a pretty teenager was called on to insert a catheter. The student and her tutor bent over the bed to examine my genitalia in detail. The student appeared never to have seen such a sight and handled my penis gingerly while her instructor explained the organ and what she was supposed to do with it. I had become an exhibit in a sex education class.

When the time came for me to be discharged, a nurse or an aide (impossible to tell which since nurses stopped dressing like nurses) held up a plastic basin full of toilet articles—a small tube of toothpaste and a toothbrush, a bottle of baby powder, a small plastic comb, and other items, with a total worth of about $12.00—and asked if I wanted them. When I said I had never seen them before, she brightly replied, "Yer payin' for 'em."

She was right. When the first bill came, I was charged $890.20 for "pharmacy." Of course, a few other items were included, as I noticed when I received an itemized bill, perhaps, all told, as much as $40 at hospital prices. Hospital bills are difficult for the uninitiated to read, filled as they are with abbreviated, arcane medical terms. But I did see allopurinol on the list. I was charged $1.45 for one allopurinol pill (local retail price, 2.4 cents), a medicine effective only for gout. Actually, the bill listed four pills, but three, perhaps in a spasm of guilt, had been removed.

In the automobile business, such practices are called "add-ons." Car dealers who try this stunt often end up in court. How does a hospital get away with it? Not long ago, *The Washington Post* carried an article on credit card companies that had to pay the Federal Trade Commission $292,000 because they charged people for services they had never agreed to buy. Has no former hospital patient, I wondered, ever complained to the FTC?

It was like returning home from another planet when at last I was discharged. It was still a female world, but it was inhabited by a loving wife and our two tail-wagging dogs. It was a familiar world, a comfortable world, with fresh air, edible food, and a drink in a large chair before the fire, where I could contemplate the problems of health care in America and deplore the cost of airline tickets to Switzerland.

An Appendectomy in Arusha, Tanzania

BARRY A. LAZARUS, M.D.

WE were all smiles, tired, but filled with a sense of accomplishment. Having arrived at the summit of Mt. Kilimanjaro the previous day, my wife and I were finally at the base after a week on the mountain. Surrounded by others who had just descended and those beginning to go up, we received our diplomas certifying our trek to Uhuru Point, 19,340 feet atop the roof of Africa. Our elation was punctured when our guide, Peter Mato, agitatedly informed us his wife, two months pregnant, was in the hospital with abdominal pain and might require surgery. Fear and anxiety crossed his face as he relayed the story to us, and we were quiet on the two-hour ride back from Kilimanjaro to Arusha.

My wife and I had been introduced to Peter Mato, a small wiry-built man weighing no more than 110 pounds, upon our arrival at Masai Camp, a tent site located behind an armed gate on the edge of Arusha township. Desiring to hike to the summit of Kilimanjaro via a less traveled backpacking route, we had arranged for the Kilimanjaro trek through a contact in Tanzania. We were surprised, and somewhat anxious, to find we were the only two "tourists" in our group along with Peter, our cook Paulie, and several porters. That I was a physician was unknown to our team until two days into the climb when we crossed paths with five Italian hikers. Two youthful members of their group, both alpine guides, were ill in their tents with acute mountain sickness, the result of their rapid ascent from the mountain base at 6,500 feet to their campsite on the Shira plateau at 11,500 feet. Fortunately, several liters of oral fluids supplemented by mild analgesics from my medical kit resulted in their prompt recovery.

Peter, my wife, and I had developed an especially close relationship in the week on Kilimanjaro. Articulate, thoughtful, and intelligent, though only minimally schooled, Peter's mountaineering ability was enhanced by his naturalist instincts perking our interest in African flora and fauna. We found ourselves identifying flowers, trees, and birds as we ascended to Uhuru. Each night after dinner we sat around the fire with Peter discussing the intricacies of Tanzanian politics, economics, and culture. So when Peter returned from the hospital the evening of our arrival in Arusha stating his wife needed her appendix out, he seemed comfortable asking me to see her and to give him my professional opinion.

Bright and early the next morning a taxi appeared at our campsite and we were off down dusty roads to the Arusha Hospital for Women. The taxi wound its way into a back alley where a single-story building with cows and chickens roaming out front did little to enhance the appearance of the privately-owned hospital of Dr. Michael Wanjara, a gynecologist. After entering a central receiving and waiting room filled with comfortable sofas and chairs, similar to my own office in the states, I was escorted by Peter through a curtain adjacent to the waiting room and down a narrow hallway to his wife's room. The three-bedded room was dingy and dark. In a corner bed lay Peter's wife with her knees drawn to her chest.

Introductions are made and Peter translates as a brief history is obtained. His wife shifts uncomfortably with a pained look on her face as she tells her story. After one day of nausea, vomiting, and crampy abdominal pain, she has been in the hospital for three days awaiting her husband's

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BARRY A. LAZARUS, M.D., a practicing urologist for 20 years in Bloomfield, senior attending surgeon, St. Francis Hospital, Hartford, assistant clinical professor of surgery (urology), University of Connecticut, Farmington, retired in 1996.

return. There are no curtains separating patients so I have an interested audience as I begin my examination. The abdomen is surprisingly soft but there is right upper quadrant rebound tenderness and right lower quadrant guarding. A rectal and pelvic examination is not possible. A nurse appears and when I ask about laboratory tests and intravenous fluids, a quizzical look crosses her face as she responds by shaking her head negatively. My differential diagnosis includes acute cholecystitis, a perforated appendix, or possibly retrocecal appendicitis. Dr. Wanjara had just completed his rounds but promised to meet me at noon to discuss her case and his treatment plan.

At the appointed hour we meet for the first time. Michael Wanjara is a tall, swarthy man dressed in suit and tie (the first suit and tie I have seen since arriving in Tanzania). He has a ready smile. We shake hands. Dr. Wanjara relates that when he saw Mrs. Mato three days ago she had typical tenderness over McBurney's point. He wanted to operate then and there, but the patient refused to give consent without her husband's approval. For the past two days she has been lying in bed taking a regular Tanzanian diet of ugali, a corn mixture, supplemented by oral fluids supplied by family and friends. Surprisingly, she is afebrile. Although I am not totally convinced that the diagnosis is appendicitis, it is my opion that a "surgical abdomen" exists. I tell Peter to give his consent for surgery. Dr. Wanjara asks if I would like to scrub during the procedure. I accept—without thinking.

Immediately, I wonder what I am getting into by agreeing to operate in this primitive, unsanitary setting. Ironically, I have been reading *The Hot Zone*, a best seller, a true story of the highly contagious Ebola virus still taking its toll in neighboring Zaire. Ebola and HIV make me pause, but Peter's pleading eyes overwhelm my doubt. Surgery is to be in four hours. Returning to the hospital at the scheduled hour, I find the waiting room full of family and friends. Peter is crying silently in the corner, and I go over to comfort him. An hour passes. It seems the usual anesthetist is away and the government hospital is "loaning" us one. Finally all is set to go and I change my clothes in Dr. Wanjara's office. Out of my jeans and tee shirt and into scrubs, cloth hat, and mask.

I am escorted out of the office, down the patient hallway to the "operating theatre." Told to leave my shoes outside, I walk barefooted into the operating room where inside the door are several pairs of OR shoes. Finally after finding a pair that fit my big feet, I look around the room for the first time. The room is surprisingly large but lit only by a four-tube fluorescent light. One tube is flickering. I am introduced to the scrub nurse who is called "sister." Her eyes crinkle in what I take to be a smile beneath her mask. The anesthetist nods in my direction. I note that he is wearing a regular shirt, unbuttoned to the waist, with bare chest showing. The patient is sitting up moaning. I ask about the plan of anesthesia. "A regional with Ketamine," is the response, "with ether by drop if a general is needed." I gulp and say nothing. I am sweating profusely, somewhat light-headed—I know it's not the altitude—and I am nervous.

Dr. Wanjara and I proceed to an adjacent room to scrub. He tells me to watch him and then do the same. He takes a bar of soap sitting on the sink, and washes his hands and arms. An assistant dips a cup into a pail of water much the same as I do when washing my car. I assume the water is sterile. I don't ask. After a few minutes he picks up a scrub brush from a container and continues to wash. The brushes are obviously used over and over. After he finishes I repeat the routine. Arms raised we walk back into the OR to gown and glove. Size 8-1/2 gloves are slid over my hands. This is all that is available and my 7-1/2 size hands are swimming in these mittens. The patient is prepped with a soapy wash repeated three times followed by iodine painted over her abdomen.

Before the surgery commences we have a chance to talk about how the hospital began. Michael Wanjara graduated from medical school in Dar Es Salaam, the capital of Tanzania. It is the only medical school in the country. He spent four years at Nairobi Hospital in Kenya training in obstetrics and gynecology with an emphasis on general surgery. Tanzania is a socialist country which received its independence in 1961, and was declared a republic in 1962. As in the English system, Dr. Wanjara is salaried by the government. Toiling long hours he has developed a lucrative private practice on the side. He began to perform vaginal deliveries in his clinic but referred complicated cases and C-sections to the government hospital. Private patients, however, wanted him to provide for all their care. When the first sections went uneventfully and "without complication," the clinic evolved into a women's hospital. Surgical procedures were the next logical step. He seemed very proud of his practice and the 20-bed hospital he had built. At age 45 Michael Wanjara was at the acme of his skills.

The surgery begins. I am asked whether I would prefer to operate or assist. I choose the latter. We agree to proceed through an old C-section midline scar and extend the incision if the appendix is normal. Watching him operate makes me think back to an earlier era when speed rather than technique was paramount. He is lightening fast but rough on the tissues. I am trying to assist but always seem one step behind. Subcutaneous bleeders are clamped but not tied. When the peritoneum is entered, all the clamps are removed. There is no bleeding. I don't bother to ask what the blood pressure is. The patient moans softly but does not move.

The OR table has only large Kocher and Kelly clamps, several right-angle retractors, and what soon becomes obvious, a limited number of sutures. I do not realize this at first. As I tie with my hands I give no thought to wasting suture length. Wanjara does and ties everything with instruments using the last millimeter of suture. I am sheepishly embarrassed. I think that the unused sutures in one of my radical prostatectomies at home would probably last through a dozen cases at the Arusha Hospital for Women. I promise myself to remember this when I return to Hartford.

We mobilize the small bowel to the cecum avoiding the pregnant uterus. A hot retrocecal appendix is seen. There is no perforation. Because the appendix is difficult to mobilize, I suggest dividing it at the base and removing it retrograde. Rather brutally the appendix is delivered and the mesentery crossed clamped. Everything is going so well. But then Dr. Wanjara removes the clamps on the appendiceal vessels rather than tying them off. (Is this because of the suture shortage?) The abdomen begins to fill with blood. Now I'm really nervous. Are there any holes in my glove? The anesthetist begins to pace and peers into the abdomen. Wanjara seems flustered. I am a wreck. After being of little help throughout the case, I find my voice and assert myself. I take over the surgery and stop the bleeding. Probably less than a unit of blood is lost. I am told that the blood pressure is stable, but the patient is now moaning louder in a Ketamine haze. The stump of the appendix is buried. The worst is over. Then the lights go out. We are in total darkness. I am assured this is not uncommon in Arusha, and a generator available for such occasions will soon kick in with electrical power. Two flashlights appear and the abdominal closure commences. Dr. Wanjara closes alternating catgut with vicryl or silk. I try to tie using as little suture as possible while making a mental note to send supplies when I can. As the dressing is applied the lights go on.

I leave the operating theatre, change back into my jeans, tee shirt, and cap, and head out to the waiting room where Peter and family await anxiously. I explain everything to them. The surgery went well but the possibility of infection exists, particularly in the wound. His wife will need to be watched closely. Tears of happiness flow and the room fills with Swahili sounds. Dr. Wanjara, dressed again in suit and tie, strides through the packed waiting room, and with eyes fixed on the door, barely acknowledges Peter and the family. Peter rushes up to touch his sleeve in supplication. Dr. Wanjara says a few words and disappears into the dusty fog.

Later that evening over beer and dinner with Dr. Wanjara and a physician from Dar Es Salaam—the lights went out in the restaurant too—I bring up the doctor-patient relationship. There is no malpractice in Tanzania I am told. The physician is king, and it would be the height of disrespect for a patient ever to sue a doctor. No lawyer would even take a malpractice case, and a jury would never find for a patient plaintiff. "Oh!" I say as I sip my beer.

Addendum: Peter's Mato's wife delivered a healthy, eight-pound girl seven months later. Dr. Wanjara was not the obstetrician. His fees were too high. A large package of unused suture material and supplies by now has reached the Arusha Hospital for Women.

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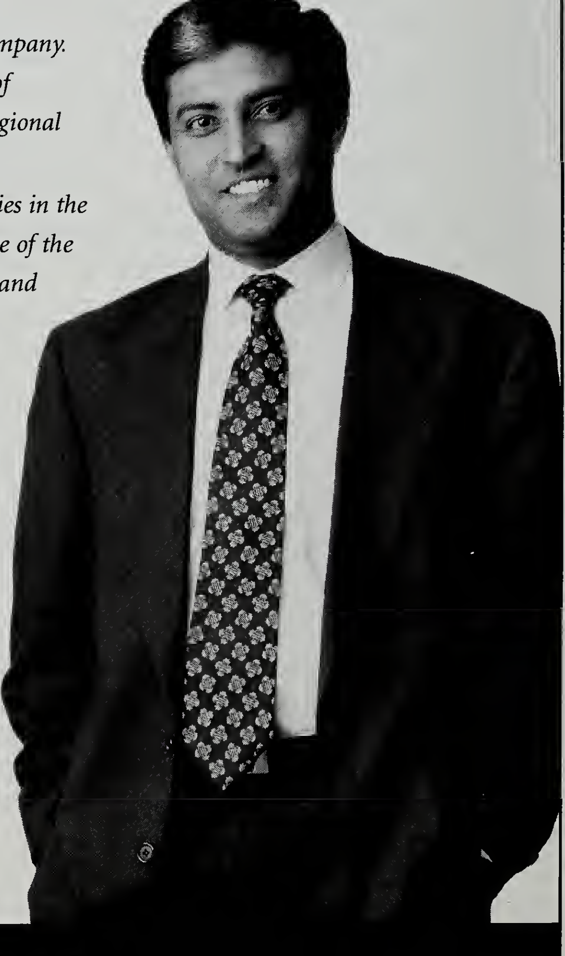

Syed Raheem
Policy Services Representative
Underwriting and Policy Services

The Trolley of Trouble and Toil

ROBERT KERIN, M.D.

AS my 50th reunion from medical school approaches, and as I contemplate the changes in medical care that have occurred, managed care certainly stands as a major one. I wonder if we in medicine will ever find our way back to a time when doctors managed the care of their patients and made decisions that put their patient's needs above profits and everything else. Is that time gone forever, or is comanagement by insurance here forever? According to Nash, "Managed care is a general term used to describe the monitoring and controlling of the quality, cost effectiveness, and resource utilization of doctors, hospitals, and other health care facilities as they provide services to patients...."[1]

Our current quagmire in medicine brings to mind the Sixth Book of Virgil's *Aeneid*.[2] There are two passages that describe the relationship between medicine and insurance companies today. It is in this book that Aeneas contemplates a journey into new territory, the underworld, to visit his father. In preparation, Aeneas approaches the Cumaean Sibyl, a prophetess or oracle, for advice. For us, the new territory in medicine is managed care. The Sibyl tells Aeneas that the way down to the underworld is easy, it is the way back that is difficult:

> But to retrace your steps to heaven's air
> There is the TROUBLE, there is the TOIL.[2]

It would appear that without even trying, we in medicine have found our way into the managed-care territory. We need no oracle to tell us that the way back is difficult, if we ever even try to find our way out of our late 20th-century medical miasma.

The Sibyl also told Aeneas that there was a price to pay for entering the underworld. She described a tree branch of solid gold deep within the forest that Aeneas must find. She instructed him to pluck this golden bough from a certain tree and present it to Proserpina, who was the guardian of the entrance to this new territory. In today's terms Proserpina might be referred to as the CEO of the facility that Aeneas was planning to visit.

> Proserpina decreed this bough as due her.[2]

We in organized medicine have brought the golden bough to the executives in the medical insurance business. Who knows what it was worth at the time of Aeneas' trip to the underworld?

A modern day Proserpina in the medical insurance forest might well be the chairman of U.S. Healthcare, Leonard Abramson. And the golden bough presented to him through the Aetna merger is calculated at $1,000,000,000, thanks to the works of the practitioners in medicine on his behalf.

In the September issue of *Connecticut Medicine*,[4] an article, "Managed Care Is a Scam" drew attention to the astronomical benefits reaped by insurance executives. Another article in the same issue, "Corporate Greed,"[5] underscores that same theme of financial inequity that typifies managed care. It points out that for every dollar taken in by U.S. Healthcare, about 25¢ is skimmed off for corporate profit, leaving 75¢ to cover medical care.

This contrasts sharply with Kaiser Permanente prepaid plans, where 90¢ on every dollar goes for patient care.

No matter what formula is used by a given conglomerate, however, the payor controls both patient and provider.

When the CEO of U.S. Healthcare takes home $1,000,000,000 as a reward for guiding the merger with

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ROBERT KERIN, M.D., orthopedic surgeon, Milford; Fellow American Academy of Orthopaedic Surgeons, Fellow American College of Surgeons.

Aetna, we know that it is financed by the work of doctors and other health professionals through the care of patients.

In the October issue of *Connecticut Medicine*, Dr. Manoharan in a letter asks, "What Will HMOs Have in Store Next for Medical Care?"[6] The very title implies that we physicians are passively waiting for the next development to be inflicted upon us by managed care. We could be compared to lambs being led by the goat to the slaughter house. Dr. Manoharan writes of the plight of women required by HMOs to subject themselves to drive-through deliveries and mastectomies. Credit for this policy procedure is laid at the doorstep of "middle-aged men sitting in oak paneled board rooms who make these decisions." Her letter concludes that drive-through prostatectomies are hardly likely to be next, there being an unmentionable gender bias in the way care is meted out. This is not only a complaint about managed care, but perhaps a prejudice against women!

We should not forget, however, that it was Hillary Rodham Clinton, who behind closed doors and in total secrecy had a hand in initiating health-care reform shortly after her husband began his first term as president.

While the current reformation of managed care did not follow along the lines of the First Lady's wishes, these may have stimulated the insurance crowd into action. For whatever the reasons, we now have our present mode of health care delivery.

What might be helpful for us to remember is there can be no health care without physicians and no managed care without physicians. If doctors had not embraced HMOs, did not dance to their tune, and did not allow themselves to be pressed into their molds, then the present state of affairs could not exist.

Those of us who refused to enroll in HMOs initially were outnumbered by our physician colleagues; we constituted a small minority. Those who did not embrace this new world of managed care, found themselves running after a trolley that had left them behind. After a time, standing on the sidelines, we who were left behind realized that we would stay behind unless we asked leave to climb aboard. This trolley, though, could well be called the Trolley of Trouble and Toil, the last two terms used by the Sibyl when speaking to Aeneas. We can only conclude that physicians have made their own bed and now must lie in it until we can join together to force change. This may well be but a fantasy rather than an achievable goal.

Organized medicine speaking for doctors has, in part, become disorganized medicine. Only our confusion is organized while managed care continues to grow and prosper, dictating the terms of our practice while we support its greed.

Within the managed-care concept the emergence of the management services organizations (MSO) is receiving considerable attention.

The MSO fosters the notion that the bigger the network, the better it is, and makes competing in the current marketplace easier. A recent article in the *Bulletin of the American College of Surgeons*[7] describes the virtual disappearance of solo surgeons in southern California, and points out that unless a new surgeon is sponsored by an established network, his early professional demise is virtually assured.

Let us return to the *Aeneid* for a moment where two gates out of the underworld are described, the Ivory Gate and the Gate of Horn. It was through the Ivory Gate that Aeneas emerged after visiting his father.

The MSO development will surely seal one of these gates of escape for practitioners of medicine. The mind set of young practitioners may well seal the other gate. "Young surgeons in California know only managed care. For this reason, it is in many ways their natural environment."[7]

A survey shows how discouraged many of these surgeons are: 33% of orthopedic surgeons, 50% of plastic surgeons, and 52% of urologists indicated that they would choose another career if they were starting out again.[7]

For all practical purposes, access to health care is now controlled by the payors. The term "managed" defines this control. We may refer to it as the three Ps: the payor controls both the patient and the provider.

Forgotten is the fact that the act of peddling insurance does not bring with it a license to practice medicine. What has happened is that peddling insurance has mated with practicing medicine spawning the Trolley of Trouble and Toil. We find ourselves riding on this trolley, having lost control and quite literally being taken for a ride.

Not all physicians feel that managed care is without merit. In a recent conversation a young orthopedist told me, when I voiced my displeasure, that I was looking in the rearview mirror, while he who approved of managed care was looking through the windshield. Some young physicians have joined the movement out of financial need, whether because of debt after moving from residency into practice, or whether because the mortgage on a half-million dollar home needs to be paid. There are circumstances that motivate physicians to join a program of assured cash flow.

These programs of assuring cash flow were not popular 50 years ago when patient care was largely in the hands of the doctor of a patient's choice. There developed a doctor-patient relationship that was recognized and respected by both parties as being preferred, personal, and professional. Today this relationship is largely in the hands of an insurance company that monitors and controls patient care. Must we physicians support managed care in its present form? Aeneas found his way back from the underworld; I wonder if we shall be as fortunate?

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Guest Editorial

Physicians Care for Connecticut, Inc.

Business Philosopy

Introduction

The insurance marketplace in Connecticut has undergone rapid consolidation. The resultant change in the landscape has left insurers with significant market power relative to providers. Though progress is being made providers continue to remain uncoordinated and lack integration. That not only restricts their market power but also limits their ability to manage medical risk effectively and to contribute value (whether expressed in terms of medical management, customer service, or member growth) to insurance products so they might be rewarded for their efforts. In response, insurers have developed highly centralized medical management and administrative programs (the only options for consistent and coordinated application of medical standards in the marketplace absent provider organizations) at significant fixed cost. These centralized systems are unresponsive to physician demands for support of medical decision-making on a real time basis. The perhaps unintended, but unavoidable, consequence of these highly-centralized systems is excessive interference in the physician's clinical decision making. This approach to medical management and decision-making has resulted in 1) increased administrative burdens and barriers for physicians and health plan members, with concomitant high member and physician dissatisfaction, attributable to a "depersonalized" operation and 2) claims that insurers and physicians are "bottom line" driven with incentives to withhold necessary care.

Insurers' market strategies reflect the disparity in bargaining power between insurers and providers. Many insurers seek to "buy the market" through heavily discounted premiums and, with market power, have forced providers to accept lower payments while maintaining insurer profit margins. Evidence of this is the three consecutive years (1992-1995) of significant profit by insurers in the New England market, even while implementing costly regional expansion plans. Premium price is the principal, if not the only, distinguishing feature of insurers' health plans. Insurers' premium pricing strategies, driven principally by the need to build market share instead of focusing on the legitimacy of medical costs, places undue pressure on physicians.

Insurers also employ a "divide and conquer" strategy. This tactic encourages physicians' distrust of hospitals ("they're too expensive") and primary care physicians' resentment of specialists ("they get paid too much"). In the process insurers treat providers as commodities, auctioning off their services at the lowest unit price. Insurers value unit price reductions and threaten to terminate provider participation if the providers do not accept insurers' rate proposals. While such a strategy produces near-term profit for insurers, this "commodity" or "auction" approach to provider relations does not provide insurers with any long-term market advantage, as the defining feature of this product–price–constitutes no barrier to competition when insurance competitors can instantly match each others' discounted premiums. Physicians, treated as commodities, have no incentive to promote membership growth of any one insurance product relative to others. Furthermore, such an approach depresses premiums and profit margins for both providers and insurers, and, if providers are asked to bear a disproportionate burden of premium reductions, may compromise the quality of care. Finally, the "divide and conquer" approach inhibits providers' access to the integrated health management systems desperately needed to effectively manage care and facilitate clinical decision making, with appropriate support, in the physicians office.

In this sense, the industry has come full circle. The very practices that now preserve insurers' profits inhibit the integration of providers, effectively denying to physicians access to the capital and administrative infrastructure necessary to achieve more effective medical management and higher quality, lower cost, and greater customer satisfaction. The industry is ripe for development of insurers with a refocused strategy. Concentration on unit price reductions is not the goal. Instead, the winning strategy requires insurers' development of product value: the optimal combination of premium price, objective measures of quality through medical management, and customer satisfaction which leads to sustained member growth and reasonable profit margins. Physicians are uniquely positioned to influence all of these product-defining factors and to serve as effective promoters of an insurance product they believe in.

Existing insurers face major hurdles in executing such a strategy. To do so, an insurer must dismantle some of its centralized systems and invest in provider infrastructure to perform those services at the local level. This process is inherently inefficient, as insurers will realize few home office savings until administrative functions appropriate for transfer to providers are transferred completely. Insurers will realize cost savings in this transfer of administrative functions more quickly only by promoting fast regional integration of providers. This presents a related issue. Insurers are afraid that if they help providers inte-

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grate and build the infrastructure necessary to complete administrative tasks, the providers will then be capable of supplanting insurers by building (or subcontracting for) the balance of the infrastructure (eg, TPA services) at nominal costs. Simply, insurers will not be supplanted if the contribution they make to the product (ie, TPA services, medical management, member services, education, marketing, product design, and underwriting) justifies the profits they receive in light of the capital costs and attendant risks associated with provider substitution of those services. The insurer that effectively harnesses physicians' energies to build product value and provides physicians with the tools to support better clinical decision making, while demanding physician commitment and accountability for best medical practices, will be the industry leader with superior products.

Physicians Care for Connecticut, Inc. ("Physicians Care") was formed to address these arguments. It believes that physicians can better control their own destiny and manage the delivery of health care to patients by operating a physician-owned and controlled health maintenance organization ("HMO") committed to the foregoing strategy. Physicians Care believes that a physician-owned and controlled HMO can better serve the needs of providers, patients, and employers than its Wall Street driven competitors. Physicians Care will harness the energies of its physicians to offer the preeminent managed care products in the market by designing an efficient administrative infrastructure responsive to physicians' needs for decision-making support and will obtain physicians' commitment to aggressively manage care and promote Physicians Care's products.

Mission Statement

A. Physicians Care for Connecticut, Inc.–Business Objective.—Physicians Care is a physician-owned health maintenance organization. The principal goal of Physicians Care is to become the insurer preferred by employers and individuals to provide health insurance products in the State of Connecticut. Physicians Care's principal means of achieving that goal is to develop products with value (defined as an optimal combination of price, objective measures of quality, and high customer satisfaction) which are so clearly identified in the minds of Connecticut's employers and residents that they will seek to obtain Physicians Care's products whenever possible. Because of the critical role of providers in building product value, Physicians Care intends to work cooperatively with physicians to encourage enthusiastic contribution to product value. Physicians Care has been designed to share with providers some of the profits traditionally reserved to insurers and to reinvest continually in its products (principally through infrastructure development to support clinical decision making) in exchange for the physicians' commitment to participate actively in marketing programs to manage medical risk and maintain customer satisfaction. Physicians Care will reward those physicians who make the most significant contributions to product value.

B. Physicians Care for Connecticut. Inc.–The Principles.—The Physicians Care mission is based on the following principles:

- *Governance.*—Governance of Physicians Care will reside predominantly with physicians, including primary-care physicians who will be indispensable to promote member growth and medical management of care.
- *Product Design/Consumer Choice.*—Physicians Care will offer a series of products (eg, HMO, point of service, and self-insured employer with third party administration) and will provide sufficient flexibility of benefits within those products to maximize consumer choice.
- *Product Promotion.*—Once the products have been defined, Physicians Care will not only seek to market its products using a traditional sales force with direct contact to employers but also will seek to work cooperatively and aggressively with providers to jointly market Physicians Care products throughout Connecticut. If its providers are prepared to commit to actively participating in membership growth initiatives, Physicians Care is prepared to reward providers for those efforts.
- *Consumer Access.*—Unlike other HMOs which seek significantly to restrict access to health-care providers, Physicians Care will offer opportunities for all physicians to participate but will impose rigorous demands on physicians' accountability to encourage best clinical practices.
- *Consumer Education /Participation.*—Physicians Care will encourage and support continual interaction with its valued members, including physician / patient education on best means of care, access, benefit design, wellness program participation, preventive health screen delivery, and active participation by members and their families in managing courses of treatment
- *Physician Support.*—Physicians Care is committed to decentralized medical management and support of physician clinical decision-making by:
    1. providing data and information to more effectively manage the delivery of care to patients, including *on-line access f*or member eligibility, referral authorization, claim adjudication and approval, and clinical database analysis;

2. promoting increased physician autonomy over clinical decisions, with data collection support to enhance physician accountability;
3. developing standards for best clinical practices and customer service and providing extensive education to promote use of such practices.
4. While Physicians Care requires profit to maintain a viable business, Physicians Care is committed to reinvesting profits in its products, principally through increased support of clinical decision-making, and in enhanced provider reimbursement.

Summary

Physicians Care will distinguish itself from competitors in the marketplace through the introduction of products with significant value. Physicians Care is dedicated to working closely with providers to identify the contributions made by each party to the building of product value and to appropriately reward providers for those efforts. The ultimate goal is the development of an insurance company in which physicians are truly invested and committed to best clinical practices and who exercise enhanced autonomy in managing their patient's care with clinical and administrative support from Physicians Care.

Craig W. Czarsty, M.D.
Chairman,
Physicians Care for Connecticut, Inc.
Joseph R. Coffey
Executive Vice President
Hartford County Association

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Commentaries

Moon for the Misbegotten

The lunatic, the lover, and the poet, thought Shakespeare, were kindred souls. He was, of course, referring to their shared frenzy, their febrile imaginations, and their habit of seeing things not visible to others. Lunacy [from the Latin, *Luna*, related to the moon] has frequently been linked to the moon and its cycles. Milton, too, talks of "Demoniac frenzy, moping melancholy and moonstruck madness," thus suggesting again that fragile sanity is somehow imperiled by the cold rays of the moon. Othello declares that when the moon comes near the earth, she "makes men mad" thus proposing that excessive exposure or undue proximity to the moon causes sane men to give up their sanity.

Lunacy was historically construed as but one of many varieties of insanity. Early English law distinguished between idiocy—a mental incompetency beginning in early childhood and lunacy, a mental unsoundness arising in adult life. During the reign of Henry VIII, a Commission of Lunacy was established. When by writ an individual was declared to be a lunatic, he lost his autonomy and became a ward of the king [*De prerogative regis*], his liberty restricted, and his tangible property absorbed by the crown. Contracts entered into by a certified lunatic were declared void including the contract of marriage even if entered into during a lucid interval.

By the 17th century lunacy was defined as a "distemper which followeth the course of the moon," reinforcing the conviction first that lunacy was an intermittent rather than a seamless form of mental derangement; and second that it was subject to the specific influence of some outside power such as the waxing and waning of the moon.

Were this alleged conjunction between the moon and earthbound madness merely a British eccentricity, it might deserve no more than a small footnote in history books. But, in truth, the belief in this causal relationship is found in virtually every culture as well as in myths and customs extending back through history.

Of the many cyclic phenomena beyond man's touch but within his sight, surely the sun was the most influential. It brought warmth and some agenda into the chaos of a savage existence. It informed men when to plant, when to undertake seasonal migrations; and eventually, it served as a celestial marker through visible equinoxes and solstices signifying a regularity of the solar orbit. It was the heavenly guide for the sailor and merchant undertaking perilous voyages. But in some ways the moon was no less important in touching man's primitive existence. Despite famine, pestilence, and war, never in the memory of man had the dependable moon ever deviated from its 28 day cycle of birth and death. It is not surprising then that the moon rather than the sun or stars provided man with his first objective criterion for the passage of time. Many more cultures than those of the Native Americans measured time, and made future appointments, by indicating "the number of moons" to be awaited.

In night skies not yet obscured by neon lighting, man could stare at the moon, watch its transits across the skies, see it diminish to a faintly visible sliver, and then disappear for three moonless nights only to return with awesome regularity. Surely an entity such as this—so visible, so dependable, so powerful, so involved in birth, death and resurrection—must hold dominion over the fortunes and lives of humans.

In most primitive mythologies the moon was symbolic of fertility and barrenness, of tidal comings and goings, of life's many fundamental rhythms such as menstruation [from the Latin, *mensis*, meaning a month]. Moonlight also reigned over evil spirits, necromancy, moistness, darkness—and madness. In the eyes of the unskeptical peasant, the moon was but a jealous reflection of the sun, capable of exerting power only when the sun was down. To primitive people, the moon was therefore a female icon, the wife of the sun and the mother of the stars. The many dieties assigned to the moon [Hecate, Diana, Isis, Ishtar, Artemis] have ever been female.

The moonlit night was a time for the moonstruck to walk aimlessly [lunambulism]; for the melancholic to moon over lost opportunities; it was a time in Greek mythology when the dead arose, guided by Hecate to their celestial destination; it was a time when those of fragile temperament might become mad through the baleful influence of the moon; it was a time for malevolent creatures such as vampires to wander unhindered by sunlight; it was a time, according to many, when latent manias came to the fore, especially when the moon was full; and it was a time when logic was ignored, when all manner of folk cures were undertaken which, if pursued in broad daylight, would surely have appalled even the most credulous. But yet it was also the time for innocent spirits like Tinker Bell to be born of guileless moonbeams.

And this full moon [a circumambulatory aphrodisiac, according to Fry] continues to encourage youthful romance. A suitor, "by yonder blessed moon," might have sworn his deathless love; while the young woman of his desires would have expressed deep skepticism of such lunar pledges, responding: "Swear not by the moon, the inconstant moon." The ultimately tragic fate of these two Veronese inamoratas, however, has not dissuaded successive generations of young lovers from intertwining moonbeams with hormones to yield yet another form of benevolent lunacy.

Stanley M. Aronson, M.D.
Editor-in-Chief, Rhode Island Medicine

STANLEY M. ARONSON, M.D., Editor-in-Chief, Rhode Island Medicine. Reprinted with permission from *Rhode Island Medicine*, January 1997; 80:3-4.

HEALTH SCIENCES AND

A Real Health Threat—Debt

January 27, 1997. Our people are inundated with health advice—don't drink, don't smoke, wear a condom, wear your seat belt, don't eat red meat, lose weight—and on and on and on. But as a practicing physician of 15 years, I have noticed a health risk that is never publicized—intolerable debt.

No, it is not the debt caused by my bill. I know what some of you cynical readers are thinking. It is debt caused by big houses, new cars, boats, big-screen TVs, Disneyland vacations, trendy clothes, and expensive toys that the kids destroy within two weeks.

More Americans are in hock than ever before. Even with a supposedly good economy, the number of personal bankruptcies is at a record high, over 1,000,000 a year. The average household debt excluding housing payments is $50,000. By the year 2000, it will be $65,000!*

Some readers may feel that you only live once and you may as well enjoy it. The fallacy in this reasoning, is that when debt becomes unmanageable, it causes unending misery. Why? Because you are now an indentured slave who is no longer in control of your life. You do not own your possessions, they own you. Unmanageable debt causes stress and stress causes heart attacks, bleeding ulcers, strokes, and maybe even cancer. Stress causes substance abuse, back pain, obesity, headaches, diarrhea, and dizziness. Stress destroys marriages.

Part of the problem is that we have a tax structure that encourages debt and speculation rather than savings and investment. It you buy an expensive house, you get a larger tax write off. You can even take out equity loans for nonessentials and deduct the interest payments. When my wife recently balked at paying some ridiculous price for furniture, the sales person suggested that we obtain a tax-deductible home equity loan. She even had the paperwork handy!

By offering credit, merchants are able to sucker customers to overpay for things. Cars are a perfect example. Thirty years ago when people bought a car, they looked at the sticker price. If they had cash, they bought it. If they didn't, they looked at a cheaper model. As prices escalated, the car companies came up with clever financing plans with supposedly low interest rates. But as the prices continued to skyrocket, the companies came up with a new plan—leasing. This means that after paying $12,000 over a three-year period, you don't even own the car! What a scam.

There are those who argue that debt is good for the economy. After all, if all those people weren't out there leasing cars, how could Ford and GM hire people. Perhaps. But it is also possible that if people weren't willing to put themselves in hock, the price of the cars would come down significantly. The skeptical reader is invited to offer to pay cash the next time he or she purchases a car. Watch how the sticker price plummets. The same phenomena occur with college tuition. The government offers loans to the poor and middle class and then the tuition goes up 10% a year. Some colleges are now costing 30 grand annually. Surprise. Surprise. Generation X will still be paying off their loans when they are being fitted for bifocals.

But the main advantage of keeping personal debt to a minimum is that you are in control of your life and this is good for your health. You are not dependent on some arrogant boss because if you lose your job, you lose your house.

As the bankers say, there are two kinds of people: those who pay interest and those who collect it. My bet is that those who collect it live a lot longer.

Joseph F. Bentivegna, M.D.

Rocky Hill

***We Like You. We Care About You. Now Pay Up. *New York Times*, 26 January 1997, section 3, page 1.**

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the *Journal* for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the *Journal* office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

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Robert U. Massey, M.D.
Connecticut Medicine
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50 Years Ago

From *The Connecticut State Medical Journal*

March 1947

Specialization and Sub-specialization

The growth of specialization is a phenomenon of such importance that it is pertinent to inquire where the process is leading. It is hard to avoid wondering whether clinicians are aware of the proportions to which sub-specialization has developed. Do physicians think this is desirable? In the beginning it was thought to be an advantage to have active clinicians who were qualified by study and experience to administer all that was known in the various clinical fields; specialists who could consult with family doctors and, when necessary, apply special technical skills. This, in general, was the role of a specialist forty years ago. Patients were referred by family doctors for help in diagnosis and treatment. If either required skill beyond the attainments of the family doctor, the patient remained in the specialist's care as long as necessary and then returned to his own physician.

This program not only made available the skills of specialists, when, in the judgment of the attendant they were needed, but it also left the general practitioner free to seek help without risking loss of contact with his patient. Beyond this the patient was not impelled by fear and worry to seek the services of specialists unnecessarily. Another great advantage was that of a continuing postgraduate course which the family doctor acquired through his contacts with the various specialists.

With the increase in the number and availability of specialists patients have been impressed by the advantage of by-passing the family doctor and going directly to a specialist. This has placed on the patient the burden of first making his own diagnosis! Otherwise how could he tell which specialist to consult! Inevitably many incorrect diagnoses have resulted and, unfortunately, they have not invariably been corrected by the specialist thus consulted. This process is confusing for the patient and frustrating to the doctor who, through public pressure, often refers patients to specialists to such an extent that his function is largely confined to that of a clearing house.

A further step in the change in medical practice is the increase in sub-specialism. A surgeon now is a fracture surgeon, a chest surgeon, an ear, nose and throat specialist, a neuro-surgeon, an eye surgeon, a urological surgeon, a gynecologist, etc. Internal medicine which, by design or by accident, includes non surgical diseases of adults and excludes mental disorders, also is divided into branches dealing with the heart, diabetes, allergy, dermatology, arthritis, tuberculosis, gastro-enterology, etc.

Now the layman seeking a self selected specialist must first decide whether his disorder of nutrition is due to allergy, tuberculosis or diabetes. This, of course is an extreme example just as such a decision puts upon the patient an impossible burden. Through such an example it is easy to see that if clinicians continue to expand sub-specialization it will be necessary for patients to demand general practitioners for both economic and physical safety or facilities must be provided on an extensive basis for group practice. At the moment the future seems to hold a vast increase in the number of clinicians devoting full time to a specialty within a specialty, accompanied by an increasing public demand for the services of specialists.

If this is a true impression of the outcome of the program of specialization it is important to inquire whether it is a desirable goal from the standpoint of either patients or doctors. Has the practice of medicine reached a point where it is necessary to establish the facilities both physical and personnel for group practice in accessible locations all over the country? It is implicit in this question that adequate groups include both specialists and sub-specialists.

Another aspect of sub-specialism concerns the co-ordination of the personnel. Even now there is evidence that this is seldom satisfactorily achieved, amongst the primary divisions. Obviously it will be more difficult as the subdivisions increase. Unless every patient always is seen by every member of a group there will arise the necessity for decisions outside of any particular specialist's province. The fracture surgeon confronted by a nutritional problem must decide whether or not to obtain the help of

(continued on next page)

Reprinted from the *Connecticut State Medical Journal*, March 1947.

HEALTH SCIENCES AND

the metabolism expert. Or the division of arthritis may rely on the original survey and struggle through a period of uncertainty and disappointment because of an unrecognized intercurrent complication. These are practical questions and it is essential to meet them before the process of sub-specialization develops into an unwieldy monster incapable of management.

Lastly, there arises the question of the effects of concentrated training upon the specialists themselves. Just at the time when valiant voices are being raised in the interest of seeing the patient as a person, is it wise to promote sub-specialism, the presumed by-product of which may be to make it less possible to see the patient as a whole?

To raise the questions is not to imply that their answers are known. But it is to suggest the need for concern with the philosophy as well as with the technics of medical practice. Perhaps our readers would like to comment on this subject.

The following editorial of interest to our readers appeared on
January 20, 1947, in the *Hartford Courant.*

Another Medical School

It is good news to many persons in Connecticut that a subcommittee of trustees of the University of Connecticut takes a less dim view of the need for a second medical college in the State than did the Hartford County Medical Association's committee a short time ago. The financial obstacles to such a venture being what they are, it may be assumed that no action will be taken immediately. But it is heartening to find that the trustees recognize increased facilities will be needed in the "near future," and that Hartford Hospital is also receptive to the idea.

The criticism had been made when the Medical Society opposed the proposal for a second school that the members seemed to consider the problem from the point of view of an adequate supply of doctors alone, rather than from that of the many young men in Connecticut now denied opportunity for a career in medicine through lack of sufficient facilities. The trustees' subcommittee, headed by Dr. Creighton Barker, secretary of the Connecticut State Medical Society, agrees that there is no shortage of doctors in Connecticut. With a host of physicians and surgeons now returned from the wars, that is undoubtedly true.

The fact remains that many young boys and girls of undeniable ability are now, through no fault of their own, kept from a career in this noblest of professions simply because Connecticut boasts but a single medical college, and that beset by too many applicants. Because of this unfortunate circumstance, the study finds, "Connecticut runs slightly below the national average among the States in proportion to its population who enter the study of medicine."

There is a need, the committee continues, for this State to realize its social obligation to contribute to the total number of persons educated in medicine for the benefit of the country as a whole. Surely Connecticut should bear its share of the total expense of manning a profession upon which the entire nation's health depends. Every year Connecticut faces a deficit of about fifty physicians, which it must offset from the national pool. As a State with a reputation for social consciousness, Connecticut should be helping to meet the nation's admitted need for doctors, instead of intensifying it. Another reason why Connecticut needs increased facilities for medical education, as the report observes, is the fact that the Yale Medical School quite properly considers itself a national institution, not one that can devote its efforts to students from Connecticut alone.

The committee estimates that a capital investment of $2,500,000 and an annual cost of $500,000 would be the minimum requirements for a medical school in Hartford. Nothing on this scale can be attempted immediately. But a longer term project is possible and desirable. The trustees, after several months study of the entire situation, find that the need does exist. The committee is to be congratulated for putting its recommendations on the basis of providing- opportunity for Connecticut's youth, and of accepting this State's share of responsibility for the national well-being.

Immune from Criticism?

Many managed-care HMOs have restricted the number of physicians on their panels. One way some of them do this is to require board certification on the part of their participating physicians, even those long recognized and even credentialed as qualified and competent in their hospital and peer communities. No boards, no work. This is an ill-conceived managed-care policy. HMOs should not *carte blanche* exclude nonboard certified physicians as a class from participating in their programs, without considering individual training, experience, and competence.

Being board certified is a badge-of-honor which carries personal rewards but certification *per se* does not guarantee a better physician. If HMOs insist on this ill-advised policy perhaps the same standards should apply to the employees of such HMOs. Practitioners, nurses, tergiversators, and sundry others doing utilization review for HMOs, whether in the hospital or when you call for preauthorization or when you are appealing a denial, should be board certified in what they do. There *is* board certification in quality assurance (QA) and utilization review (UR) available through credible national certifying organizations.

It is very discouraging to realize that an HMO can require that its physicians must be board certified, yet the faceless person on the other end of the phone line (1-800-NO-U-CANT) who is denying your patient's stay is not certified or boarded in what he or she is doing, ie, utilization review, quality assurance, or risk management. Where is the quality on the part of the HMO? How does anyone know what the HMO employees' qualifications and education are?

As expected, the National Committee on Quality Assurance (NCQA) does not address this issue. Competence and qualification of HMO employees do not appear to be NCQA's or the managed-care industry's concern. No wonder there are so many mistakes, inappropriate denials, and delays. Not many in the managed-care industry seem to care or have an interest in getting their own workers appropriately credentialed.

Next time you are talking with a nurse or physician reviewer ask them if they're board certified in QA, UR, or risk management, then ask if they even know there are reputable national certifying organizations. Then complain to the Department of Health, the Insurance Department, the payors, and your legislator and tell them you're concerned about the quality and competence of the HMO reviewers. If we physicians must be credentialed so should HMO reviewers. What is sauce for the goose is sauce for the gander. The reviewer should be specialized in the same field in which he or she is reviewing. It's not surprising to find out that the person who has denied a patient's stay for rehabilitation does not know what a physiatrist is. Should a pediatrician reviewer deny a surgical procedure? No. Qualified surgeons should review and deny surgical procedures. This would never occur if the managed-care industry were held to the same high standards of education that physicians are. This is a quality-of-care issue regarding the HMO and its employees, both physician and nonphysician. Some HMOs do have qualified reviewers with excellent training, but they are far too few.

Insurance companies may deny it, but they are practicing medicine when, for example, they use arbitrary standards made up by HMO industry-friendly firms like Milliman & Robertson. Managed-care entities should not practice medicine, but in fact they do influence what medical procedures are done or not done, as well as when patients will be admitted and discharged for their "approved" procedures. HMOs influence medical care by determining what they will reimburse for, what types of procedures are covered, and how long a hospital stay will be.

It seems only reasonable that the executives and management of these managed-care companies should do two things: get a license to practice medicine, and take the Oath of Hippocrates. Then patients would know something about the qualifications and integrity of the HMO executives influencing their care. It's a quality-of-care issue. The NCQA should get involved. Patients and legislators should insist on it as a matter of quality of care. No credentials, no work.

Managed-care executives and the denying voice on the other end of the phone have long been treated as immune from criticism. It's time something was done to point out their lack of medical expertise and accountability. That shouldn't be too difficult at all.

Michael M. Deren, M.D.
President

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REFLECTIONS ON MEDICINE

Dolly Bursts Upon a Brave New World

ROBERT U. MASSEY, M.D.

JUST as we knew back in the 1930s that some physicists somewhere would work out the secret for releasing the tremendous power in the nucleus of the atom—"there is enough energy in a teaspoon of water to drive the Queen Mary across the Atlantic and back," I recall reading in my high school physics text—so we have known for some time that someone, somewhere would clone a mammal. As of today, I've seen no scientific reports of it, but the *Hartford Courant* for 24 February carried the story of the birth of a healthy lamb named Dolly in Scotland that was a clone. The news had been released two days before from the Roslin Institute in Midlothian, and sounded authentic, unlike the cold fusion story several years ago.

Even though they must have seen it coming, it took the ethicists by surprise. So ethically repugnant, seemed the view of some, that society should never allow it. "This is so dangerous, and worked so poorly it would be completely immoral to do it in people," Arthur L. Caplan of the University of Pennsylvania is quoted, adding, "Even to try it seems outrageously immoral." John Fletcher, medical ethicist at the University of Virginia, was more cautious, "Being able to reproduce yourself would be the most narcissistic act in the world, but there might be circumstances under which it might be thinkable. I should not push the condemnation button so quickly."

Most of us, I suspect, reacted as Dr. Fletcher did—we sort of ran down hill, for a few moments outraged, then greatly offended, to, well, maybe, in some instances! Anyway, that narcissistic person would be quite wrong if he thought he was about to reproduce himself; he might reproduce his body down to its last pigmented mole, but not himself. The few identical twins that I've known were not one but two quite distinct selves.

> O brave new world
> That has such people in't. (*The Tempest* V, i.)

As I write this, I know nothing of the details of the Roslin cloning. In Huxley's *Brave New World*, ripened eggs were transferred to a porous recepticle which was then immersed in a "warm bouillon containing free-swimming spermatozoa" Then by the "Bokanofsky Process" the embryos were made to bud, "becoming anything from eight to ninety-six embryos—a prodigious improvement, you will agree, on nature." A foolish student asked "where the advantage lay."

> "Can't you see? Can't you see? ... Bokanovsky's Process is one of the major instruments of social stability.... Standard men and women; in uniform batches, The whole of a small factory staffed with products of a single Bokanovskified egg.".... For the first time in history ... Community. Identity, Stability."

You may recall that the aim was to produce a pyramidal class structure with the alphas and betas at the top (unbokanovskified) and gammas, deltas, and epsilons as untroublesome workers and happy consumers at the bottom. For most world leaders that has always been the aim!

Huxley's deep concern that the rapid advance of technology, the dull uniformity of mass production, and the drive for efficiency and stability must lead finally to world-wide welfare-tyranny seems now curiously out of date. Yet there is a profound unease when anything with such potential for harm as mammal cloning bursts upon the scene. Giles Scofield, associate professor of health law and ethics at the University of Connecticut School of Medicine was quoted in the *Courant* on 25 February: "If we've learned one thing with technology, it's that when we're playing at God, we're playing with matches. We've been burned a few times."

In the same issue, Dr. Robert J. Levine, professor of medicine at Yale, commented, "We live in a country in which a very powerful government has said 'Trust me'—Watergate, atom bombs, and LSD experiments on enlisted men." The notion of cloning mammals conjured up for him, as it did for me, Huxley's *Brave New World.*

My old friend, Sir Thomas Browne, 17th-century physician at Norwich, might at one time even have welcomed this clever way of reproducing our kind:

> I could be content that we might procreate like trees, without conjunction, or that there were any way to perpetuate the World without this trivial and vulgar way of union; it is the foolishest act a wise man commits in all his life....

Browne wrote his *Religio Medici* at age 30. He married Dorothy Mileham six years later; she bore him 12 children, including one pair of twins. If he could have foreseen cloning, he would have expunged those lines in the second edition of the *Religio.* Perhaps the next advance of our species toward full-fledged humanity is to confess that we may not do all that we know how to do –that there are some rights that must be abridged!

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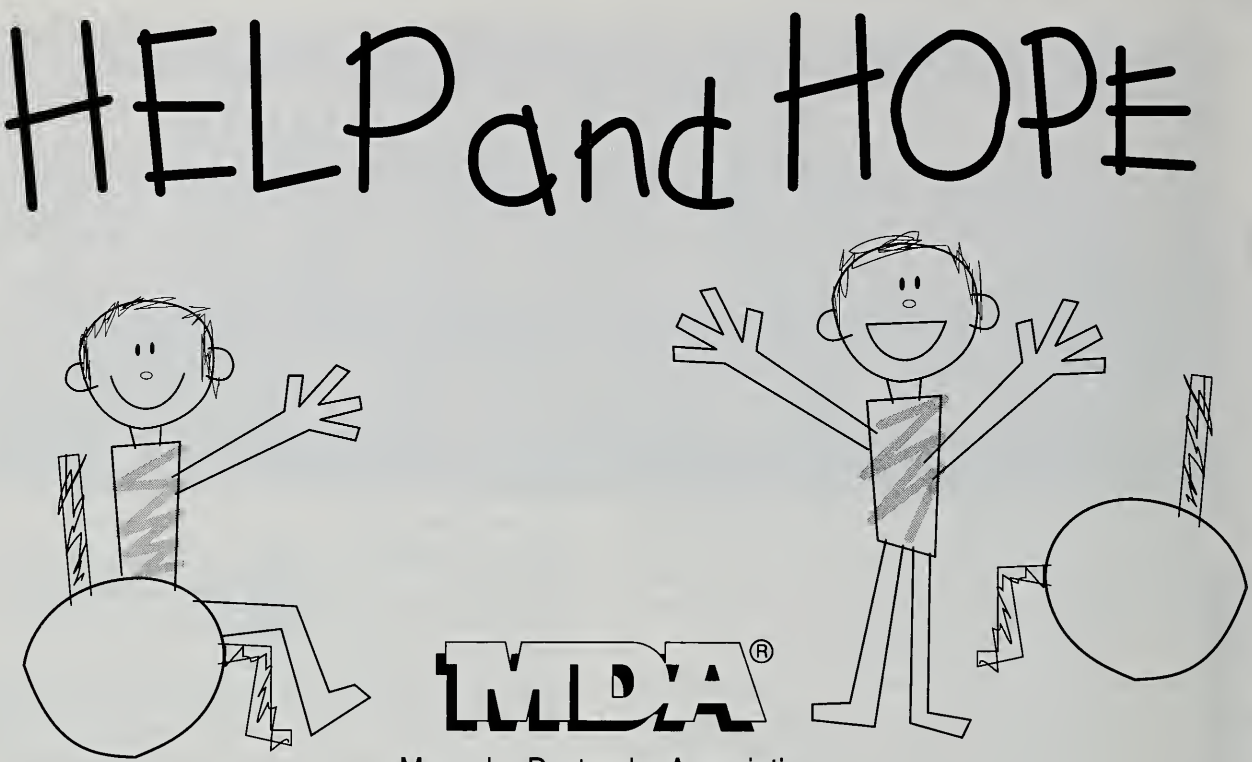

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This Month's Reading in Review

TIMOTHY B. NORBECK

"Cost-cutting pressures, limited access to health insurance, and a cloudy federal role are undermining the quality of health care in this country," an expert panel sponsored by the American Health Quality Association recently warned.... The panel's moderator, former Senator Warren Rudman, said that "one key culprit" are the "managers of the nation's large insurance companies" who are "making short-sighted decisions."... He went on to say that "such shortsightedness underscores the need for physicians, rather than those with experience in business, finance and actuarial science, to set quality standards for the health care industry."

American Medical News
(10 February 1997)

Dr. Robert Brook, director of the health sciences program for RAND Corporation and one of the expert panelists mentioned in the item above, agreed with former Senator Rudman, and added "The challenge for the next five years is determining if we will pay anything but lip service to the issue of quality in health care, and do anything more than try to lower costs."

AM News (10 February 1997)

"Everyone agrees in principle that things have to be changed. Many rules governing Medicare HMOs were drafted in the 1980s, before these health plans' explosive growth."

A federal policy maker explaining the need for
Medicare beneficiaries who are dissatisfied with
HMO coverage to get broader appeal rights.
Wall Street Journal (13 February 1997)

A recent poll performed for the National Coalition on Health Care found that 82% of respondents agreed totally or somewhat that medical care has become a big business that puts profits ahead of people; 77% said cuts in hospital services endanger patients, and 74% said the high cost of medical care is due in part to greed of insurance companies.

Hartford Courant (1 February 1997)

In 1916 the richest man in the country, John D. Rockefeller, could have paid off the American national debt all by himself.... In 1997 William Gates and Warren Buffett together could not pay two months' interest on it—about $50 billion—without going broke.

Forbes (24 February 1997)

Believe It or Not: An Orange County, California, man who felt he didn't pay enough to have his hip replaced sent thousands of dollars to his HMO and the Social Security Administration.... Jerry Piemeisl, 70, said he believes people who can afford it should pay a reasonable part of their health care costs. "It's a matter of conscience," he said, "and I can afford more than I paid."... He sent a check for $2,000 to Secure Horizons (the HMO, which returned it) and $3,000 to Social Security (which suggested he donate the money to a fund for Medicare beneficiaries).

Physician Financial News (15 February 1997)

"Chronic care already consumes the largest share of US health care expenditures.... In 1990 (the latest year available), $425 billion in direct medical costs—nearly 70% of the nation's expenditures on personal care—went for people with chronic conditions."

Robert Wood Johnson (1996, issue #4)

"LaPorte Hospital in Indiana has become the first hospital to identify patients by their thumbprints.... The procedure shaves minutes from patient file access times and can potentially save lives."

Hospital and Health Network (5 February 1997)

Only in America: Andrew Daniels filed a $500,000 lawsuit against M&M/Mars Company and a Cleveland, Ohio, retailer because one of the M&M Peanuts he bit down on had no peanut in it. As a result, his teeth bit through his lip, which required his hospitalization and various surgery bills. One claim against the retailer is under the legal theory of "failure to inspect" the candy.

News of the Weird by Chuck Shepherd
(24 January 1997)

HEALTH SCIENCES

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

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HEALTH SCIENCES

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HEALTH SCIENCES

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Connecticut Medicine

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HEALTH SCIENCES AND

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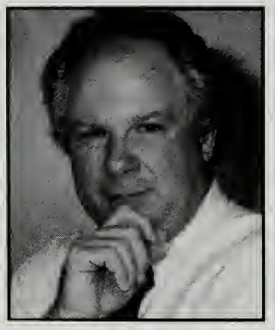

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Coronary Stent Placement as a Bridge to Coronary Artery Bypass Surgery in an Unstable, Anemic Jehovah's Witness Patient:
A Case Report and Review of Bloodless Surgery Techniques

JAMES E. DOUGHERTY, M.D., ROBERT C. GALLAGHER, M.D.,
JEFFREY A. HIRST, M.D., MICHAEL J. RINALDI, M.D., JOAN M. BISKUP, P.A.-C,
ROBERT D. CHAMBERLAIN, M.D., AND DAVID WATERS, M.D.

ABSTRACT—Bloodless cardiac surgery would be optimal for all patients undergoing major or complex heart surgery; however, for Jehovah's Witnesses it involves a religious law and is fundamentally mandated. In this context, we review a case of unstable angina with associated anemia requiring catheterization and definitive intervention in a Jehovah's Witness patient. Coronary stenting to stabilize the acute coronary syndrome is described with definitive total revascularization performed by coronary artery bypass graft surgery after utilizing erythropoietin and aggressive blood conservation techniques.

Introduction

THE reduction and total elimination of homologous blood transfusions remains an illusive goal in patients undergoing major cardiac surgical procedures including coronary artery bypass grafting (CABG). In spite of preoperative autologous donation when possible, intraoperative blood salvage, and the use of state of the art surgical and medical techniques, approximately 50% of patients undergoing CABG in the United States still receive homologous blood, although this rate continues to fall.[1,2,3] Blood transfusion carries small, but definite risks of transfusion reaction and infection, increases cost and length of stay, and raises the patient's fears of HIV and other infection.[4,5,6,7]

The Jehovah's Witness community, because of its firm and unbending refusal to accept blood transfusions and all related blood products, provides a strong motivating force for the health-care community to strive toward the goal of bloodless surgery.[8,9,10] This requires a total commitment on the part of both the health-care institution and the entire health-care team both to minimize blood loss and to maximize available technologies of blood production.

We report the use of culprit lesion angioplasty with stent placement as a bridge to total revascularization with coronary bypass surgery. This occurred in the setting of unstable angina and associated anemia in a Jehovah's Witness. The role of a dedicated Bloodless Medicine and Surgery Center and the concomitant benefits to all patients is discussed in the context of interventions and management decision points.

Case History

A 74-year-old Hispanic female Jehovah's Witness was admitted to a local hospital with chest pain secondary to unstable angina with prominent ischemic electrocardio-

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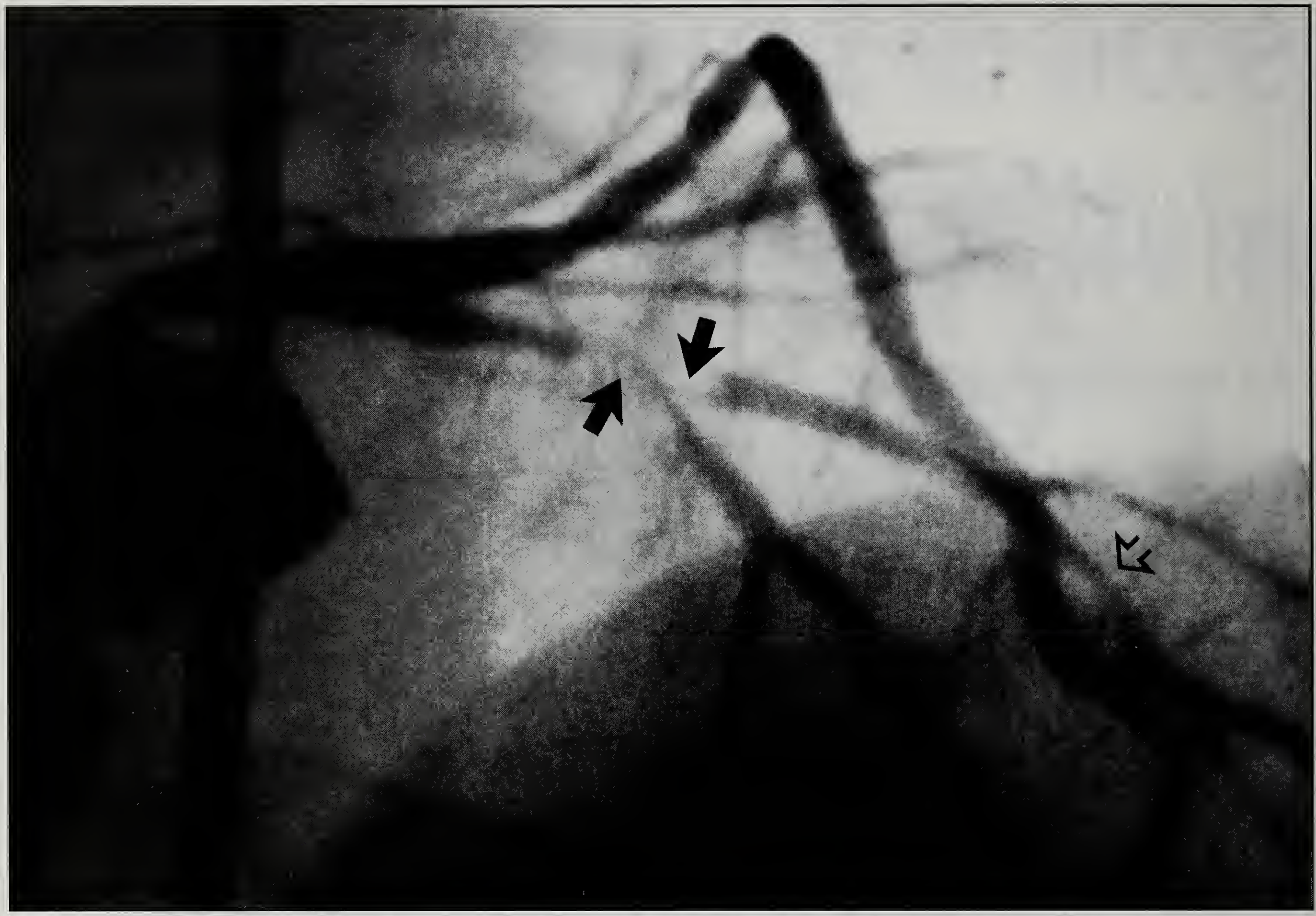

Figure 1.—Coronary angiogram of left anterior descending (LAD) and diagonal arteries from cranial view. The "culprit" severe bifurcation LAD/diagonal stenosis (closed arrows) is shown with modestly severe mid-diagonal lesion (open arrow).

graphic changes and no evidence of myocardial necrosis. Recurrent pain at rest was resistant to intravenous heparin and nitroglycerin infusion prompting an uneventful diagnostic catheterization. Findings included: preocclusive, mildly calcific, 95% moderate length proximal left anterior descending (LAD) stenosis involving the origin of a moderate-sized diagonal branch of the LAD (true bifurcation stenosis), 80% of mid-diagonal stenosis, 70% main circumflex stenosis, and 70% dominant right coronary artery stenosis. The admission hematocrit was 36.7%. After the procedure the patient continued to be unstable and was transferred to Hartford Hospital for interventional treatment utilizing bloodless techniques. Following transfer, blood conservation measures were intensified, phlebotomy minimized, recombinant human erythropoietin (Epogen®) begun, and maximal medical therapy employed.[11,12,13] The admission hematocrit at this hospital was 28% and remained stable; however, angina and ischemia intensified with paroxysmal anterior and anteroseptal injury associated with dynamic T wave changes. The patient was transferred to the coronary intensive care unit and under direct visualization (open technique) a 9.5 F intra-aortic balloon pump was inserted. This resulted in immediate resolution of the patient's pain and unstable ECG findings. The hematocrit remained stable at 28% and the heparin infusion was continued.

At this time, catheter-based intervention as a palliative bridge to future total revascularization via coronary artery bypass grafting was selected as the best treatment option. The LAD/diagonal coronary arteries were felt to be culprit lesions based upon ECG findings and known anatomy. Additional heparin was infused and the intra-aortic balloon pump was continued. The LAD/diagonal stenosis was a complex bifurcation lesion and was initially approached with double wires and independent dilations of the LAD, ostial diagonal, and mid-diagonal lesions. Due to a Type C dissection of the LAD following balloon angioplasty, a 3 mm Palmaz-Shatz stent was placed (Figs. 1,2,3). This provided wide patency of the LAD. Final dilations of the ostial diagonal lesion were necessary due to "snowplow" effect of the LAD stent. The following morning the intra-aortic balloon pump and angioplasty sheaths were removed, again utilizing a direct visual technique, and surgical repair of the femoral arteries accomplished. The hematocrit remained approximately 28%, the patient was symptom free, ambulated, and was discharged seven days after the procedure. Over the ensuing eight weeks, the patient continued treatment with

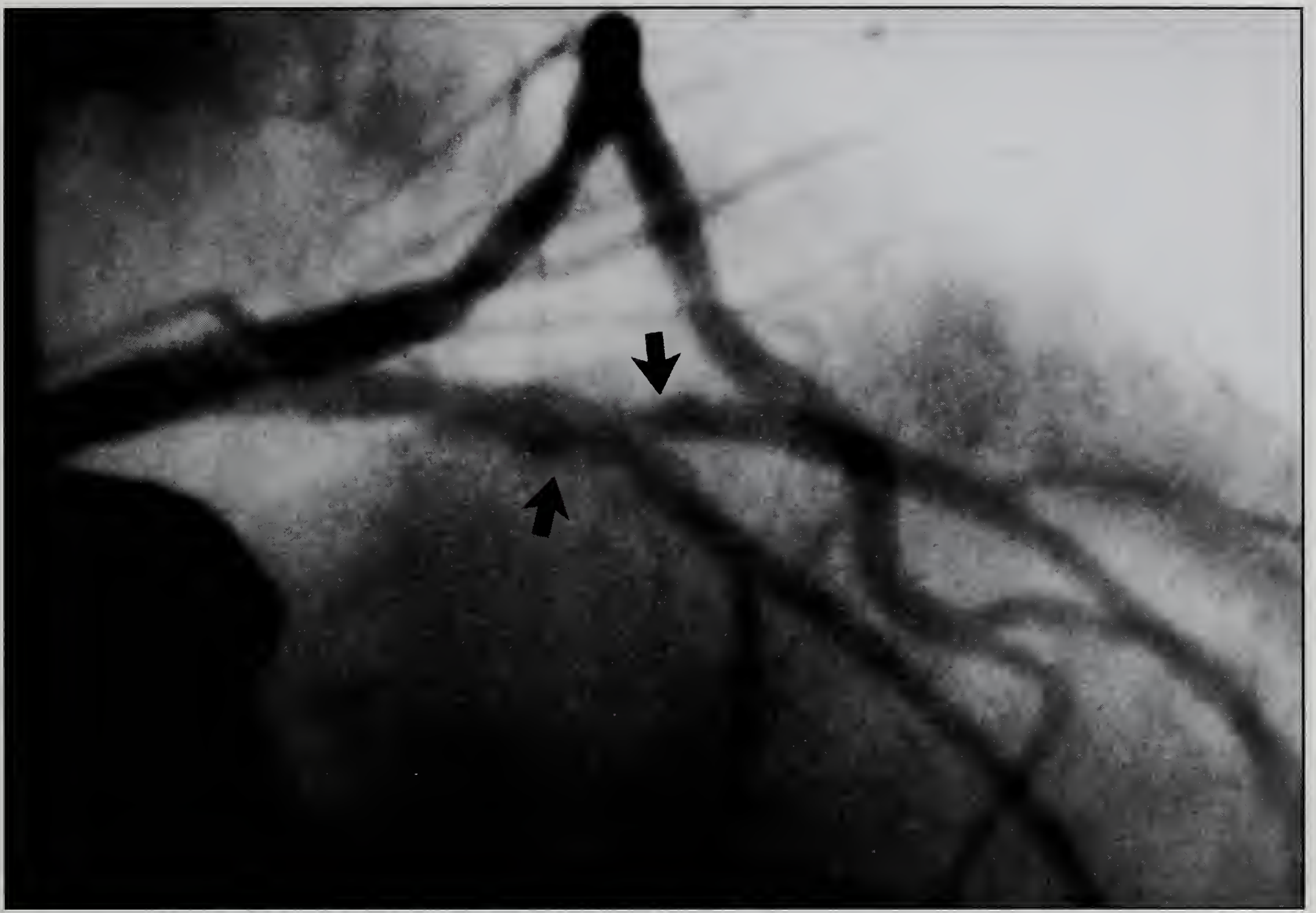

Figure 2.—Repeat coronary angiogram after balloon angioplasty of LAD and ostial diagonal stenosis. (Note marked haziness and suboptimal result of LAD treated segment [closed arrows].)

aspirin and erythropoietin. The hematocrit normalized to 41%, and during the 10th week following PTCA/stent placement, angina pectoris recurred. Elective repeat coronary angiography confirmed restenosis of the LAD/diagonal system, and semielective CABG surgery was recommended and performed. Bypasses were placed aorta to circumflex, aorta to LAD, aorta to right coronary artery, and left internal mammary artery to the large diagonal vessel. Surgery was uneventful and the patient was discharged home on the fifth postoperative day. Discharge medications included aspirin, ferrous gluconate, and Metoprolol. Since surgery the patient has remained symptom free with normal exercise nuclear perfusion imaging 12 weeks after the bypass operation.

Discussion

The Jehovah's Witness membership numbers more than five million strong worldwide with approximately 920,000 members in the United States. This denomination was founded in Pittsburgh, Pennsylvania, by Charles T. Russell, and was incorporated as the Watchtower Bible and Tract Society in 1884, and ultimately moved to its permanent headquarters in Brooklyn, New York, in 1909.[14] The Witness doctrine regarding the prohibition of blood transfusion and related blood products is well documented in the medical literature and in Witness publications.[15,16] With the same belief and passion, the Witness membership and religious doctrine forbids suicide, and, aside from refusal of blood transfusions, members both wish and accept complete and modern technological health care to its fullest extent.[17] This personal and religious belief is now well established legally, and the courts have repeatedly upheld and defined the right of Witnesses to refuse transfusions and related blood products even if this may directly or indirectly result in the loss of human life.[18] It is this fervent religious belief in combination with rapidly evolving medical and surgical techniques in modern health care that has created the opportunity and challenge exemplified with this patient.

Acute coronary ischemic syndromes are increasingly approached with catheter-based revascularization techniques. The entire spectrum of accelerated angina, classic unstable rest angina with ECG changes, and acute myocardial infarction has been treated successfully with balloon angioplasty. Stent placement where balloon angioplasty results are unfavorable has significantly reduced in-hospital recurrent ischemic events and has reduced six-month adverse clinical events of death, recur-

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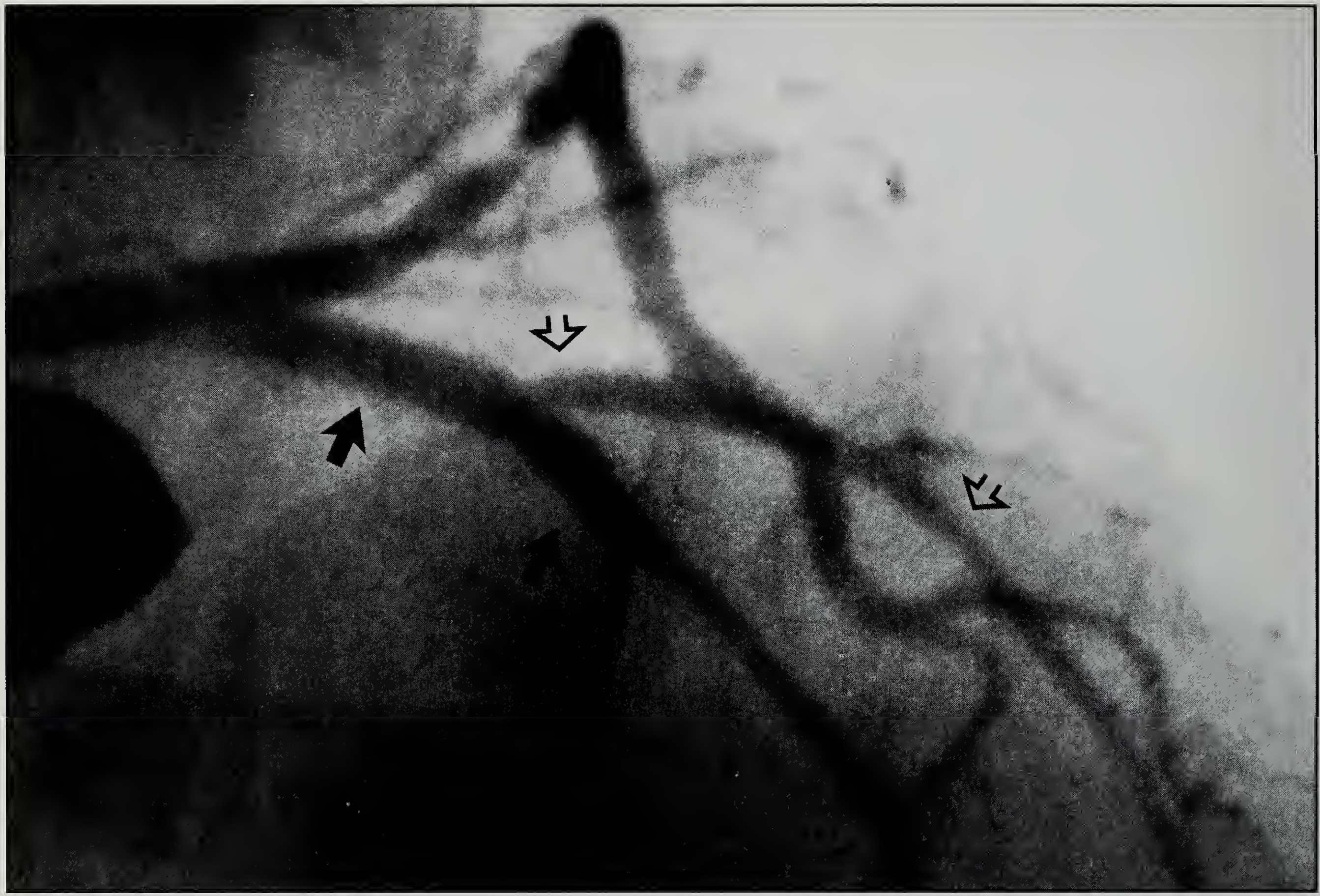

Figure 3.—Final angiogram after stent placement in LAD (closed arrows) and balloon angioplasty of ostial and mid diagonal artery (open arrows).

rent infarction, and repeat percutaneous transluminal coronary angioplasty (PTCA).[19,20] Stabilization of the "culprit" vessel is sometimes only palliative; definitive and total revascularization may need to be accomplished via CABG because of diffuse, multivessel disease that is inappropriate to approach with balloon angioplasty. Stabilization of acute lesions as a bridge to more controlled and complete therapy is a viable role of catheter based revascularization. In this patient, balloon angioplasty and stent placement did resolve the acute ischemic syndrome. It is well documented that 30% to 40% of patients who undergo PTCA may develope restenosis one to 12 months after the procedure.[19] This percentage increases in patients with unstable angina and unfavorable lesion characteristics such as vessel calcification, extended lesions, and bifurcation lesions. All of these factors were present in this case. Restenosis most frequently occurs during the first six months following balloon dilatation or stent placement, most commonly two to four months after the procedure. This window of opportunity, however, allowed for the hematocrit and hemoglobin to normalize in this patient, and created the opportunity for safe and definitive coronary artery bypass surgery without blood replacement. The risk of cardiac surgery, such as CABG or cardiac transplantation, in Jehovah's Witness population may be modestly increased when compared to the population at large, but the difference in reported studies has not been statistically significant.[21,22] The length of stay and surgical course in our patient were unremarkable and followed the usual pathway with discharge on the fifth postoperative day.

The strategies employed here are consistent with the goals of respecting the patient's personal and religious beliefs, yet merging together the various medical and surgical technologies available to provide superior outcomes in this patient population. It is anticipated that these principles and techniques will be applied to all patients undergoing cardiac surgery at Hartford Hospital.

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The Outcome of Triplet Pregnancies at Hartford Hospital—1989–1996.

RENEE MAILLOUX B.S. AND STEPHEN L. CURRY, MD.

ABSTRACT— The advent of artificial induction of ovulation has increased the incidence of triplet pregnancies. Although the outcome of triplet pregnancies has improved through advanced technology, several studies have suggested that triplets conceived by artificial induction of ovulation have worse prenatal and perinatal outcomes than those conceived naturally. Our study examined the outcome of 14 sets of triplets conceived at Hartford Hospital between 1989 and 1996. Five of 14 sets of triplets were conceived by artificial methods and nine of 14 were conceived naturally. The mean gestational age was 31.8 weeks for artificially conceived infants *vs* 29.7 weeks for naturally conceived infants. Average weight at birth was 1.625 kg in the artificially conceived study group and 1.377 kg in the naturally conceived group. Time spent in the neonatal intensive care unit was 4.67 weeks for the artificially conceived study group and 3.57 weeks for the naturally conceived group.

It is concluded that there was no difference in outcome in the triplets conceived by artificial induction of ovulation *vs* natural conception. Maternal age and sex of triplets were important factors determining perinatal outcomes of triplets.

Abbreviations Used in Text

ART = artificially conceived
RDS = respiratory distress syndrome
PTL = preterm labor
PPROM = premature premature rupture of membranes
NICU = neonatal intensive care unit
IVF = *in vitro* fertilization

Introduction

SINCE the advent of assisted reproductive technologies, the rate of triplet pregnancies has increased dramatically. The incidence of triplet pregnancies has increased up to 10 times the low rate of triplet pregnancies prior to ovulation inducing agents.[1] Ten percent to 30% of all pregnancies achieved by induced ovulation result in higher order pregnancies.[2] Triplet births are associated with increased medical complications. These complications include preterm labor (PTL), premature rupture of membranes (PRM), preeclampsia, polyhydramnios, and postpartum hemorrhage. Premature delivery of infants can result in severe medical complications such as respiratory distress, necrotizing enterocolitis, and interventricular hemorrhage.

The outcome of triplet pregnancies has improved through management of preterm labor and advanced neonatal care. However, a few studies have suggested that triplet pregnancies conceived by clomiphene citrate and menotropins have been associated with worse perinatal outcomes than those triplets conceived naturally.[1,3,4] Many studies have associated clomiphene citrate with higher early abortion rates due to its direct effect on the endometrium.[2] Studies concerning the effect of clomiphene citrate on long-term pregnancy outcomes have been equivocal.

A study by Holchberg et al in 1982 of pregnancy outcomes showed that triplet pregnancies conceived by artificial induction of ovulation had increased hospitalization times for the mothers, but better outcomes of infants when compared with triplets conceived naturally.[5] It was

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Table 1.—Maternal Age, Infant Weight, and Infant Sex of Artifical *vs* Naturally Conceived Infants

Induction Type	**Maternal Age**	**Infant Weight**	**Infant Sex**
Artificial	31 years	1.625kg	3/5 same sex
Natural	30 years	1.377kg	5/9 same sex

clear from this study that the induced pregnancies were diagnosed earlier, closely monitored, and had a higher number of caesarean section deliveries than the naturally conceived triplets.

Two other large studies have shown equivocal results. A prospective study of 106 triplet pregnancies showed no difference between triplet pregnancies conceived by artificial ovulation or *in vitro* fertilization (IVF).[4] Another prospective study of 36 triplet pregnancies found no difference in clomiphene citrate induced pregnancies and naturally conceived pregnancies. However, the authors found significant differences between menotropin use and naturally conceived triplets.[2]

Our study is a retrospective chart review of triplets born at Hartford Hospital between 1989 and 1996. The study was done to investigate further whether the perinatal and neonatal outcomes of triplet pregnancies were adversely affected by ovulation inducing agents at our large, community based hospital. Amount of time infants spent in the neonatal intensive care unit (NICU) has not been previously reported.

Material and Methods

All women with triplet pregnancies delivered at Hartford Hospital between January 1989 and September 1996 were included in this study. Fourteen triplet pregnancies were delivered in this time period. Five of the fourteen triplet pregnancies were induced: two with clomiphene citrate, two with pergonal, and one with metrodin and intrauterine insemination. Nine triplet pregnancies were conceived naturally.

The data concerning these pregnancies were collected by a retrospective chart review. None of these triplet pregnancies were diagnosed after the first trimester, and none were the result of fetal reduction of a higher order pregnancy.

Outcome variables were determined by standard, accepted criteria: PTL (occurrence of uterine contractions before a gestational age of 37 weeks); PPROM (rupture of membranes before onset of labor and before 37 weeks); respiratory distress syndrome (RDS) of newborn, diagnosed on the basis of clinical, biochemical, and radiographic criteria. Stillbirth is defined as fetal death in a newborn following more than 20 weeks of gestation. Neonatal mortality includes death of newborns in the first 28 days of life.[3]

Maternal age and triplet sexes were evaluated separately since these have been suggested as confounding factors. Nine triplet sets were the same sex and four triplet sets were combined. Six women were less than 30 years old while eight women were greater than 30 years of age.

Results

The five triplet sets conceived by artificial induction shown little difference in all criteria when compared to those conceived naturally (Table 1). The average maternal age of women who conceived by artificial induction was 31 years old *vs* 30 for those who conceived naturally. Three of five triplets conceived by artificial induction of ovulation were same sex sets *vs* five of nine naturally conceived triplets that were the same sex. In evaluating prenatal results it was found that preterm labor started at 29.7 weeks in the ART group compared to 26 weeks in the spontaneous ovulation group. Only one artificially induced pregnancy had PPROM at 29.1 weeks of gestation. Four of the naturally conceived pregnancies experienced PPROM at an average gestational age of 21.9 weeks.

The neonatal results were as follows (Table 2): Average gestational age of newborns conceived by artificial induction of ovulation was 31.8 weeks; average gestational age of triplets conceived naturally was 29.7 weeks; average birth weights were 1.625 kg in ART study group *vs* 1.377 kg in the naturally conceived group; the average time spent in the NICU was 4.67 weeks for ART study group *vs* 3.57 weeks in the naturally conceived infants. There were no stillbirths or neonatal deaths in the induced ovulation study group. The naturally conceived study group included a vaginal delivery of 20-week triplets that

Table 2.—Prenatal Complications, Gestational Age, and NICU Time of Artifical *vs* Naturally Conceived Infants

Induction Type	**PPROM**	**PTL**	**Gestational Age**	**NICU Time**
Artificial	29.1 weeks	29.7 weeks	31.8 weeks	4.67 weeks
Natural	21.9 weeks	26.0 weeks	29.7 weeks	3.57 weeks

Table 3.—Neonatal Complications of Artificial *vs* Naturally Conceived Infants

Induction Type	**Complications**
Artificial	Respiratory distress, patent ductus arteriosis, hypoglycemia bradycardia, apnea, polycythemia
Natural	Neonatal death at 20 weeks, neonatal death at 23 weeks, cord prolapse with neonatal death at 24 weeks, neonatal death at 27 weeks–congenital anomolies, respiratory distress, patent ductus arteriosis, sepsis, necrotizing enterocolitis, choroid plexux cyst, aortic stenosis

resulted in neonatal death; a caesarean section delivery of a 23-week set of triplets resulted in the birth of two nonviable fetuses and the neonatal death of infant on day one; one triplet of a set delivered at 24.6 weeks had a neonatal death on day one because of cord prolapse; and one infant of a set of triplets born at 27 weeks died as a result of multiple congenital anomalies on day one of life. Major neonatal complications were similar for both groups and included RDS, persistent ductus arteriosis, hypoglycemia, necrotizing enterocolitis, bradycardia, apnea, and hydrocele. Choroid plexus cyst, pneumonia, sepsis, and aortic stenosis all were complications seen in a naturally conceived triplet set (Table 3).

Results comparing same sex *vs* combined sex triplet sets were as follows: Preterm labor at 27.6 weeks *vs* 27.2 weeks; gestational age 28.8 weeks *vs* 33.5 weeks; and NICU time 5.98 weeks *vs* 3.12 weeks.

Maternal age also had an effect on perinatal outcome of triplets. The results of infants born to mothers less than 30 and greater than 30 years of age were as follows: Preterm at 28.7 weeks *vs* 26.3 weeks; average gestational age was 31.4 weeks *vs* 29.8 weeks; and average NICU time was 3.09 weeks *vs* 6.00 weeks for maternal age less than 30 and greater than 30 respectively.

Discussion

The outcome of induced *vs* spontaneous triplet pregnancies has been previously studied with varying results. Some authors have shown an increased incidence of prematurity and low birth weights compared to naturally conceived infants.[1,2,3] Others have shown induced pregnancies to be associated with better outcomes than spontaneous pregnancies.[5] Still other reports have shown no difference between the two methods of conception.[4,7] Others have suggested that once maternal age and fetal gender were accounted for as confounding factors, there would be no difference between the two methods of ovulation.[1,3] Various studies done have all had limitations because of the low incidence of triplet pregnancies. Ideally, a study should compare triplets prospectively, matched by age, parity, gender, and origin.

Many theories have been proposed to explain differences in outcomes between triplets conceived by medication and those conceived spontaneously. A study by Freidler et al showed a significant difference between triplets conceived by IVF and spontaneous ovulation, but could not find significant differences in outcome between IVF and menotropin induced ovulation. They hypothesized that it is the influence of gonadotropins on the ovaries, causing high levels of estrogen around the time of conception that somehow alters perinatal outcome through an unknown mechanism. They also suggest that clomiphene citrate, with its estrogenic/antiestrogenic effects at the time of pregnancy should cause outcomes intermediate to gonadotropin exposed pregnancies, and spontaneous conception.[3]

Mordel et al hypothesized that menotropin induced ovulations may produce a hyperrelaxinemia state that may be associated with premature labor. They also suggested that the pregnancies induced by medications may have been higher order pregnancies that underwent resorption very early in the pregnancy and were undetected. By an unknown mechanism these products of resorbed conception affect timing of labor.[2]

From these various explanations it is clear that there is no adequate explanation for why these drugs would adversely affect perinatal outcomes. Investigators who have found it advantageous for women to conceive by artificial reproductive methods suggest the early diagnosis of higher order pregnancy, frequent monitoring, and bed rest are major factors influencing better outcomes. In this study of 14 sets of triplets born at Hartford Hospital between 1989 and 1996, there were no major differences noted between the five sets induced artificially and those conceived spontaneously. It may be significant to note that preterm labor, gestational age, and average birthweights of triplets conceived by artificial induction of ovulation are slightly better than those conceived naturally (see Table 2). These three factors are crucial because they directly affect the severity of neonatal complications. No triplets conceived by artificial induction of ovulation resulted in a stillbirth or neonatal death. Six stillbirths and one perinatal death occurred in the triplet pregnancies conceived spontaneously. Furthermore, of 13 triplets admitted to the neonatal intensive care unit with RDS, 12 survived with one death

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occurring on day one of life. Time spent in the neonatal intensive care unit was slightly longer in the triplet group conceived by artificial induction of ovulation compared to the triplets conceived spontaneously. The one infant who perished on day one of life contributed to this difference since the study numbers were small. This time difference may diminish with a larger study group.

Confounding factors for triplet survival include maternal age, maternal parity, triplet zygosity, and triplet gender. Newman et al evaluated three studies that showed worse perinatal outcomes of triplets conceived by artificial ovulation *vs* spontaneous conception. These authors included a fetal gender and parity based on the study data. Through a three-way analysis of variance the apparent advantage of spontaneous conception disappeared.[1] In our study we evaluated the affect of maternal age and same sex/multiple sex triplets on perinatal outcomes. There was no significant difference in maternal age in the induced ovulation *vs* spontaneous conception group (31 *vs* 30 respectively). There also was no significant difference between the sexes of the triplet sets born to those who conceived via medication *vs* naturally (3/5 *vs* 5/9 sets of triplets were same sex/multiple sex). It was clear from the data that same sex triplets had worse perinatal outcomes than combined sex triplets. Gestational age was significantly lower (28.8 weeks *vs* 33.5 weeks). Average NICU time also was much longer in same sex triplets: 5.98 weeks *vs* 3.12 weeks. It is probable that most of the same sex triplets are dizygotic resulting from a monozygotic splitting of dizygotic twins. However, these clear adverse perinatal effects may be due to a negative influence of monozygosity.[1]

Several studies have determined that women over 30 years old had triplets that weighed more and had better perinatal outcomes.[1,3] Our study showed quite different results. Women less than 30 years old enjoyed later preterm labor and gestational ages compared to those over 30. The NICU time was much shorter for women less than 30 *vs* greater than 30: 3.09 weeks *vs* 6.00 weeks even though gestational age was relatively the same (31.4 *vs* 29.8 weeks). Maternal age seems to be a strong negative influence on perinatal outcome.

Although our study population was small, a few conclusions may be drawn from our experience. There was no large difference in prenatal, perinatal, or neonatal outcomes of triplets conceived by medication or naturally. Of those triplets who entered the NICU, only one infant died on day one of life. Furthermore, maternal age and fetal gender/zygosity are the major influences determining perinatal outcomes of triplets born here.

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Pica: Are You Hungry for the Facts?

DANIEL G. FEDERMAN, M.D., ROBERT S. KIRSNER, M.D.,
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ABSTRACT—Pica, the persistent and compulsive ingestion of particular food items or nonnutritive substances, has been associated with iron deficiency, zinc deficiency, geophagia, mental deficiency, developmental delay, and a family history of pica. Nutritional, sensory physiologic, psychosocial, and cultural theories have been advanced to explain this phenomenon, but the etiology of pica is poorly understood. Pica, secondary to iron deficiency, is relatively common and remits after iron therapy. Complications of pica include abdominal problems (sometimes necessitating surgery), lead poisoning, hypokalemia, hyperkalemia, mercury poisoning, phosphorus intoxication, and dental injury.

Pica is an underdiagnosed problem that can be caused by a variety of disorders and can lead to serious complications.

Introduction

ONE of the most enigmatic behaviors of human beings is pica, the persistent and compulsive ingestion of particular food items or nonnutritive substances. We present a case of a patient who exhibited amylophagia (the ingestion of starchy substances), discuss theories that attempt to explain this behavior, and describe some consequences of pica.

Report of a Case

A 43-year-old African-American male with a history of migraine headaches and schizophrenia presented to the emergency room complaining of generalized weakness and orthostatic lightheadedness. He denied melena, bright red blood per rectum, hematemesis, diarrhea, and abdominal pain but did admit to eating a box of corn starch daily. His medications included haloperidol and benztropine, and he denied taking aspirin or other nonsteroidal anti-inflammatory agents.

On physical examination he had a supine blood pressure of 114/72 mm Hg and pulse of 95 which on standing was 129/76 mm Hg with a pulse of 117. His conjunctivae were pale. His tongue was normal and no angular stomatitis was noted. The stool examination was negative for occult blood. The remainder of the examination was normal. His hemoglobin was of 9.2 gm/dL and hematocrit of 29%. Mean corpuscular volume was 74.4 fL. Serum ferritin was markedly reduced at less than 10 ng/mL (normal 14–179 ng/mL) and his transferrin saturation was less than 10%. Upper endoscopy and colonoscopy were scheduled, but the patient was lost to follow-up.

Discussion

Pica, which derives its name from the Latin word for magpie (a bird known for its voracious and indiscriminant appetite) can take the form of a craving for a variety of substances. Among the more common items ingested are ice (pagophagia), laundry and corn starch (amylophagia), dirt or clay (geophagia), and dried paint. Other substances reported to have been compulsively ingested include paper, writing materials, cigarette butts, toothpaste, matchstick heads, buttons, insects, leaves, ashes, sand, feces, coffee grounds, oyster shells, and newspaper. Pa-

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tients of all age groups, races, socioeconomic backgrounds, and geographic regions have engaged in this behavior. However, it appears to be more common in infants, young children, pregnant, and nursing women, African-Americans in the United States, people from developing countries, psychotics, epileptics, and the mentally retarded.[1] This phenomenon is not a new one. Since the time of Hippocrates it had been observed that people craved unusual foods and that it may have been associated with "disorders of the blood" and a "greenish complexion" (chlora chromata).[2]

A plethora of risk factors have been implicated as causes of pica, such as dietary iron deficiency, iron deficiency secondary to blood loss, zinc deficiency, geophagia, mental deficiency or developmental delay, a family history of pica, and psychosocial stress. Of these, iron deficiency has received the most attention.

Incidence and prevalence estimates of pica have varied tremendously due to the methodology employed. Crosby reported that 50% of his patients with iron deficiency exhibited pica, with the majority demonstrating pagophagia.[3] In an urban hospital setting, Rector prospectively evaluated 55 patients with evidence of gastrointestinal blood loss and iron deficiency anemia (as defined by a hemoglobin concentration less then 12 gm/dL in women and less than 14.5 gm/dL in men and a serum iron saturation less than 10%).[4] He found that 58% of the patients exhibited evidence of pica, which resolved with iron therapy. Eighty-eight percent of the patients in his study with pica exhibited pagophagia. One patient craved sugar, one dirt, and one peanuts (gooberophagia).

Pica has also been shown to be a prevalent condition in pregnancy, affecting at least one-fifth of high-risk women. Furthermore some studies have demonstrated this behavior can lead to adverse outcomes for mothers, fetuses, and infants.[5]

As Sayetta explains in her review a multitude of theories have been espoused to explain the etiology of pica: nutritional, sensory, physiologic, psychosocial, and cultural.[6] The nutritional theory proposes that appetite-regulating brain enzymes are altered by iron or zinc deficiencies leading to specific cravings. Interestingly, the item chosen is usually a poor source of mineral replacement. Those who adhere to the sensory theory of pica will point out that geophagia has been associated with relief of nausea, an increase in saliva production, and altered smell or taste. According to psychosocial theories, pica has been explained as an infantile hand to mouth behavioral response to stress, as a habit disorder, or a manifestation of an oral fixation. Cultural theory proponents cite the fact that geophagia has been incorporated in religious rites, folk medicine, and magical beliefs. However, no one theory explains all forms of pica. Despite the plenitude of theories, the etiology of pica is poorly understood.

Patients may be reluctant to disclose their cravings either because they are ashamed of a behavior that may be perceived as "bizarre," or are unaware that it may be an important symptom indicative of an underlying problem. They may, however, complain of fatigue, palpitations, lightheadedness, or shortness of breath. Physicians should be diligent and persistent when obtaining a history and may frequently need to enlist the aid of a patient's family and friends. They must also be attuned to physical signs of iron deficiency such as spooning of the nails (koilonychia), flattening of tongue papillae, angular stomatitis, and pallor.

One form of pica, geophagia, has been found to be both a consequence of, as well as a potential cause of iron deficiency. In the United States it has been commonly, but not exclusively, described in pregnant African-American women in the South. Some people who have migrated to the North have even gone so far as to arrange for regular mailings of clay, dug from their favorite site.[7] In addition, clay has also been sold openly in grocery stores in the South. Clay is thought to cause iron deficiency by acting as an iron exchange resin and binding iron in the gut. Minnich has shown that Turkish clay decreases the absorption of iron by 25%.[8] In contrast to clay, starch ingestion was not found to impair the absorption of iron. The anemia of iron deficiency during pregnancy could be corrected even when the patient persisted in eating an average of 70 grams of starch per day.[9] Instead, starch ingestion's contribution to iron deficiency is believed to be through its caloric content and lack of significant metal content.

Surgical complications of pica, although uncommon, may occur. Anderson et al reviewed 43 reported cases requiring surgical evaluation or intervention.[10] Of the 27 patients on whom data were available, 20 were female, 14 white, seven black, and seven were aborigines. Eighteen of the 43 patients were described as mentally retarded. Of the 32 cases in which the type of pica was described, 22 exhibited geophagia. On presentation, patients complained of abdominal pain (67%), nausea or vomiting (26%), constipation (26%), and abdominal distention (7%). On examination, 52% exhibited abdominal tenderness and 16% rebound tenderness. Abdominal distention was noted in 32% and an abdominal or rectal mass was appreciated in 36%. On abdominal radiograph, opaque material was observed in 79%, ileus in 26%, and free air in 17%. Twenty-nine of the cases eventually underwent surgery.

Other reported complications of pica include lead poisoning from lead-containing paint chips, hypokalemia and hyperkalemia from clay ingestion, phosphorous intoxication from eating match heads, mercury poisoning from paper pica, and dental injury.

In summary, pica is a worldwide problem, dating back centuries, and either causes severe problems or is indicative of a serious underlying malady. Physicians must not only be aware of the manifestations and causes of iron deficiency, but the consequences of pica as well. Although we do not fully understand the etiology of this behavior, familiarity with this entity may lead to early diagnosis.

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Trends in Cancer Incidence in Connecticut

ANTHONY P. POLEDNAK, Ph.D.

ABSTRACT—The population-based Connecticut Tumor Registry was used to examine recent trends (1980-84 to 1990-94) in average annual age-standardized incidence rates (ASRs) for invasive cancers. Noteworthy were the increase for lung cancer in women (but a decline in men), the sharp increase for prostate cancer (but little change in female breast cancer), increases for melanoma of skin (both sexes) and non-Hodgkin's lymphoma (especially in males), and declines for colon and rectum (both sexes). Reducing cancer incidence rates will require expanded primary prevention efforts, involving mainly behavioral or life-style changes, with an important role for primary-care physicians.

CANCER and heart disease are the leading causes of death in the United States, and the death rate for ages less than 65 years has been higher for cancer than for heart disease since the early 1980s.[1] Cancers are also the leading cause (among chronic conditions) of hospital stays for middle-aged as well as elderly persons.[2] Numbers of incident cancers will increase in the future, even if incidence rates do not rise, because of the aging of the population.[3] This situation would be exacerbated by rising cancer incidence rates, as predicted from recent increases in smoking prevalence among adolescents.[4] Studying trends in cancer incidence rates is relevant to assessing the effects of changes in health-related behaviors and exposures to carcinogens, and for planning efforts in primary prevention and etiologic research.

Methods

The Connecticut Tumor Registry (CTR) was established in 1941 in the Division of Cancer Research of the State Health Department, but tumor clinics and registries had been started in local hospitals as early as 1935. Trained clerks from the CTR reviewed case histories of all cancer patients admitted to any general hospital after 1 January 1935, and records of outpatients and nonhospitalized patients identified through pathology laboratories and radiology departments.[5] In 1981, hospitals and private pathology laboratories were required (by public health legislation) to report incident cancers. Improvements in the completeness and quality of cancer registration are indicated by the decline in the proportion of cases ascertained only by death certificate (reaching 2% or lower since 1965-69) and an increase in histological confirmation rates (reaching at least 90% by 1965-69).[5] This report focuses on recent trends (1980-84 to 1990-94), but data from earlier periods are also included to indicate longer-term trends. Incidence data were considered complete for cancers diagnosed through 1994, although very small changes in numbers for 1994 may occur.

This report is limited to newly diagnosed (incident) invasive cancers; however, *in situ* bladder tumors are also included (as in SEER reports),[6] because of problems in distinguishing (histologically) *in situ* from invasive bladder tumors. Lymphomas, not included with specific anatomic sites, are combined into separate categories (ie, Hodgkin's disease and non-Hodgkin's lymphoma),[5] using International Classification of Diseases for Oncology (ICD-O-2) morphology codes.[6]

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Table 1.—Average Annual Age-Standardized Incidence Rates
per 100,000 per Year in Connecticut Residents in 1980-84, 1985-89 and 1990-94: *Males*

Cancer site or histology	**1980-84 Rate per year**	**1985-89 Rate per year**	**1990-94 Rate per year**
Oral, pharynx	18.1	16.7	15.5
Esophagus	7.2	7.8	7.4
Stomach	14.2	12.9	12.0
Colon	48.7	47.8	42.8
Rectum	22.7	22.6	19.1
Liver, ducts[a]	3.5	4.3	5.0
Gallbladder[b]	2.4	2.4	1.9
Pancreas	11.2	11.0	10.4
Larynx	10.1	9.0	8.5
Lung[c]	85.4	85.2	79.1
Connective tissue[d]	2.8	2.6	2.5
Melanoma of skin	11.3	14.1	18.2
Prostate	71.3	77.3	138.7
Testis	4.4	4.2	4.8
Bladder	34.7	36.1	35.8
Kidney[e]	12.4	13.3	13.8
Brain, CNS[f]	7.3	7.7	7.7
Thyroid	2.0	2.1	2.7
Hodgkin's disease	4.1	4.1	3.9
Non-Hodgkin's lymphoma	13.9	16.3	19.1
Multiple myeloma	4.6	4.3	5.0
Leukemia	14.1	13.3	12.3
Kaposi's sarcoma	0.7	2.2	2.5
Unknown[g]	14.0	14.3	12.3
All	**431.6**	**441.8**	**493.4**
No. of cancers	**33,074**	**36,678**	**43,153**

[a] Liver and intrahepatic bile ducts.
[b] Gallbladder and other biliary tract.
[c] Trachea, bronchus and lung.
[d] ICD-0-2 490-499.
[e] Kidney, pelvis, and ureter.
[f] Brain, meninges, and cranial nerves.
[g] Other and ill-defined sites.[5]

Notes: Rates are for invasive cancers only, except that bladder includes both *in situ* and invasive cancers. The specific cancer types shown are those with more than 25 cancers in each time period. Shown at the bottom are the age-standardized rate for all cancers and the total number of cancers; these figures include rarer sites/histologic types not shown separately in the table.

Average annual age-standardized rates (ASRs) were calculated by the direct method. That is, age-specific rates for Connecticut residents in five-year age intervals from 0-4 to 80-84 years and for age 85+ years were multiplied by the corresponding age distribution (proportions) of the 1970 total U.S. population. Connecticut population data were obtained from the Connecticut Health Department for 1935-79[5] and the Bureau of the Census for 1980-94. For the 10 sites most common (in 1990-94) for each sex, average annual ASRs from 1935-39 to 1990-94 (five-year intervals) were plotted (Figs. 1-4). From 1980-84 to 1990-94, ASRs were tabulated for cancer sites (Tables 1 and 2) with >25 cancers per time period. More-detailed data are available from the CTR, including age- and sex-specific rates.[7]

Results

Males.—Since 1935-39, increases have occurred for all of the major types of cancer (Figs. 1 and 2), except for rectum and oral cavity-pharynx. Since 1980-84, the ASR for all sites combined has increased, due largely to prostate cancer (Table 1; Fig. 1). Other sites showing recent increases include liver, melanoma of skin, kidney, thyroid, non-Hodgkin's lymphoma, and Kaposi's sarcoma.

Table 2.—Average Annual Age-Standardized Incidence Rates per 100,000 per Year in Connecticut Residents in 1980-84, 1985-89, and 1990-94: *Females*

Cancer site or histology	**1980-84 Rate per year**	**1985-89 Rate per year**	**1990-94 Rate per year**
Oral, pharynx	7.0	6.3	6.2
Esophagus	2.1	2.1	2.0
Stomach	5.8	5.4	5.5
Colon	36.2	33.9	30.3
Rectum	13.3	12.4	11.4
Liver, ducts	1.5	1.3	1.5
Gallbladder	2.3	2.4	2.3
Pancreas	8.3	8.4	7.9
Larynx	1.8	2.0	1.9
Lung	33.1	40.6	45.3
Connective tissue	2.1	1.7	1.8
Melanoma of skin	8.9	10.7	12.5
Breast	97.5	112.4	115.9
Cervix	8.1	7.9	7.4
Corpus[a]	23.1	20.6	23.5
Ovary	14.2	14.4	15.3
Bladder	9.1	9.2	9.8
Kidney	5.0	5.9	7.0
Brain, CNS	5.4	5.3	5.3
Thyroid	4.7	4.5	6.0
Hodgkin's disease	2.8	3.0	3.3
Non-Hodgkin's lymphoma	10.6	12.6	12.9
Multiple myeloma	3.3	3.4	3.2
Leukemia	8.3	7.8	7.5
Unknown	11.3	10.1	9.9
All	**335.1**	**353.4**	**363.2**
No. of cancers	**34,764**	**38,812**	**41,300**

See footnotes to Table 1.

[a] Corpus, plus "uterus not otherwise specified."

The long-term trend in the ASR for prostate cancer is striking. The ASR for prostate was higher than that for lung in 1935-39, but was surpassed by lung in 1965-69. Due to a sharp rise from 1985-89 to 1990-94, the ASR for prostate has again overtaken that for lung (Fig. 1; see also Table 1).

Since 1935-39, the ASR for stomach cancer has declined steadily (Fig. 2). Recent declines have occurred for smoking-related cancers (especially lung and larynx), colon and rectum, and leukemia. The different long-term trends for certain cancer types resulted in a marked convergence of ASRs over time for these cancers (Fig. 2).

Females.—As for males, secular trends (since 1935-39) in ASRs include large increases for most sites (Figs. 3-4). However, only small changes occurred for uterine corpus, ovary, rectum, and pancreas. The secular increase in lung cancer is even more striking than that for males, with a continuing increase in the ASR (in contrast to the recent decline for males). From 1980-84 to 1990-94 the ASR for all sites combined increased slightly, with increases for smoking-related cancers (lung, bladder, and kidney but not pancreas) and melanoma of the skin (Table 2). In comparison with males, the recent increase was larger for thyroid but smaller for non-Hodgkin's lymphoma. The ASR for breast cancer had risen slowly through the decades, until a sharper increase in the 1980s; however, the increase from 1985-89 to 1990-94 was slight (Fig. 3). Thyroid cancer, which has continued to increase, is the only site (disregarding gynecologic cancers and breast cancer) for which the ASR has been consistently higher in females than males since 1935-39. However, by 1990-94 the ASR for gallbladder had become slightly higher for females than males.

Stomach cancer, which is more common in males than females, declined (as in males) since 1935-39 (not shown), but there was no clear decline after 1980-84 (Table 2). The

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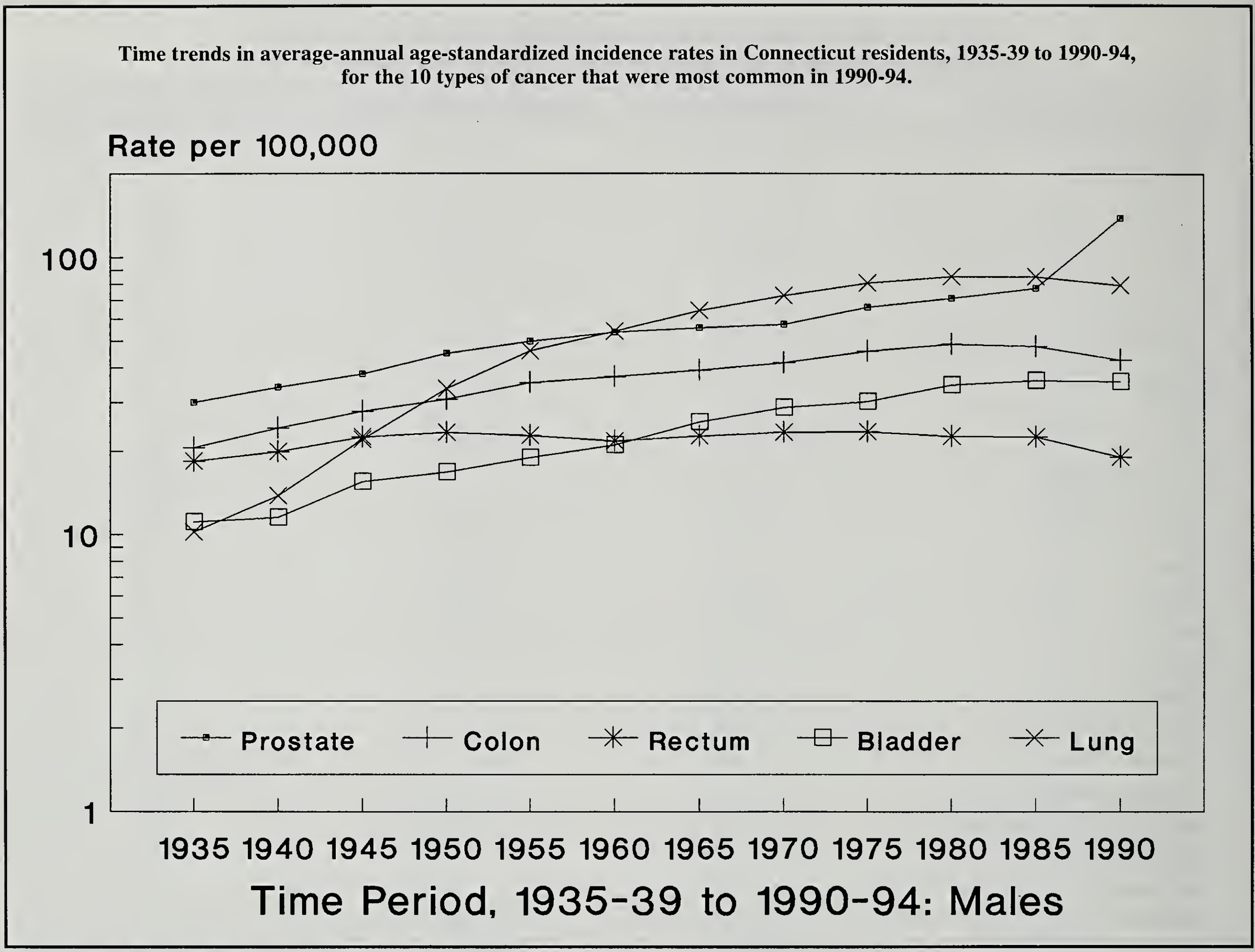
Time trends in average-annual age-standardized incidence rates in Connecticut residents, 1935-39 to 1990-94, for the 10 types of cancer that were most common in 1990-94.

Figure 1. Males: Prostate, colon, rectum, bladder, lung.

decline in invasive cervical cancer has continued. Declines in the ASRs for cancers of the colon and rectum, and for leukemia, occurred since 1980-84 (as for males). As for males, divergent trends for some types of cancer resulted in a convergence of ASRs over time (Fig. 4).

Discussion

Increasing Rates.—The large increases in ASRs for many sites from 1935-39 to 1965-69 are in part artifactual, due to improvements in cancer registration and in the diagnosis of cancers.[3,5] However, some of these early increases are largely real—eg, for lung cancer, and probably for breast cancer.[8,9] For cancers strongly related to smoking (eg, esophagus, larynx, lung, bladder, pancreas, and kidney), differences in temporal trends between males and females are generally consistent with sex differences in trends in smoking rates (with about a 20-year lag for females). For the period 1980-84 to 1990-94, ASRs for smoking-related cancers (especially larynx and lung) have been rising in females and declining in males, again reflecting trends in smoking habits.

Other recent increases (1980-84 to 1990-94) in ASRs also may be largely explained by trends in known risk factors. ASRs for skin melanoma, probably underestimated in cancer registries,[10] have increased in both sexes, due (at least in part) to increases in the frequency of intense exposure to ultraviolet light (starting at young ages).[11] The ASR for non-Hodgkin's lymphoma has increased since 1980-84 in both sexes, but the larger increase in males is consistent with an teh effect AIDS. This also holds for Kaposi's sarcoma, with an ASR in 1990-94 of 2.5 per 100,000 in males (Table 1) *vs* 0.2 in females (25 cases; data not shown). The increase in the ASR for kidney cancer may reflect, in addition to trends in smoking, the trend toward larger body mass[12] which is a risk factor.[13] Recent increases in ASR for thyroid cancer could reflect improvements in detection, as well as the secular increase in body mass.[14]

For prostate cancer, analysis by individual year of diagnosis (not shown) indicated that the ASR peaked in 1992 and then declined. This pattern is most consistent with increased screening, including the use of prostate-

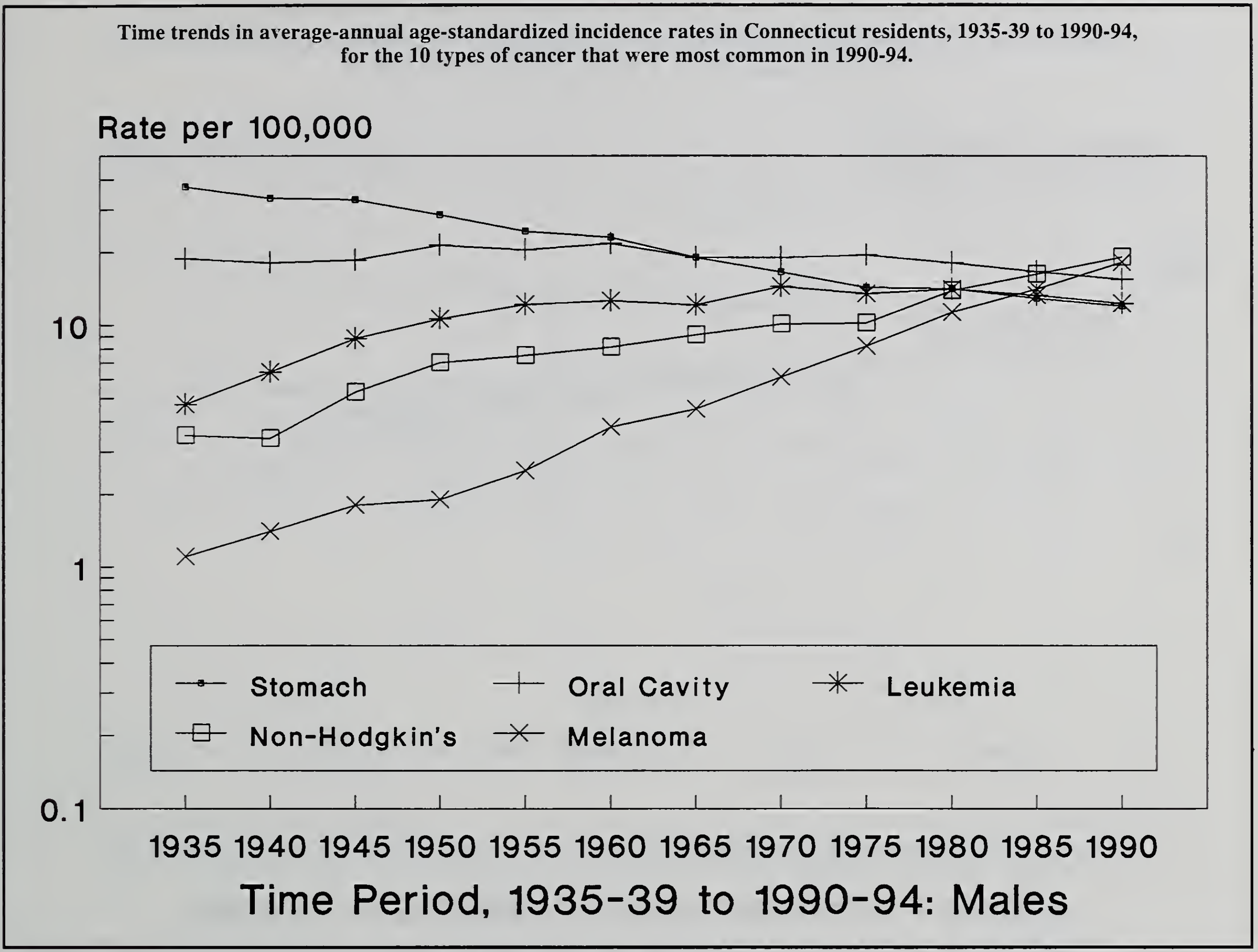
Time trends in average-annual age-standardized incidence rates in Connecticut residents, 1935-39 to 1990-94, for the 10 types of cancer that were most common in 1990-94.

Figure 2. Males: Stomach, oral cavity-pharynx, leukemia, non-Hodgkin's lymphoma, melanoma of skin.

specific antigen (PSA) testing since 1989.[15] In contrast to prostate cancer, the ASR for female breast cancer increased only slightly from 1985-89 to 1990-94. Recent trends in breast cancer ASRs have been strongly influenced by the increase in breast cancer screening in the 1980s; the plateau in incidence rates around 1990-94 had been anticipated from these trends in screening.[16]

Thus, recent increases in ASRs are probably explained largely by changes in known risk factors, or by trends in cancer screening rates, although further research is needed.

Declining Rates.—A continuous decline in the ASR for stomach cancer since 1935-39 has occurred for both sexes, although it may have ended (at least for females) by 1985-89 (Table 2) and racial-ethnic differences persist. This "unplanned triumph" in epidemiology probably reflects long-term trends toward improvements in food preservation and diet.[17]

The recent decline in leukemia incidence rates does not suggest the introduction of a new leukemogen or increased population exposures to known leukemogens (such as benzene and ionizing radiation).

ASRs for (invasive) colon and rectum cancers showed different secular trends, but both declined after about 1980-84. This could reflect increased screening, which results in the surgical removal of preinvasive tumors,[18] and possibly also to the decline in dietary fat intake in the U.S. since the mid-1960s.[19]

The continuing decline in the ASR for invasive cervical cancer undoubtedly results from cytologic cervical screening (which detects preinvasive changes), introduced in the 1950s and widely used by the late 1960s However, despite the limitations of Papanicolaou tests, increased educational efforts are needed regarding screening,[20] in order to reach the Year 2000 objective for screening rates.[21] Educational efforts are also needed regarding behavioral risk factors (that is, smoking and sexual behavior) relevant to the primary prevention of cervical neoplasms.

Other Conclusions and Implications.—Recent trends in ASRs support the need for expanded primary prevention efforts, including effective school health education programs,[22] to modify smoking (especially in females)[23,24] and other behavioral risk factors such as exposure to HIV,

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Time trends in average-annual age-standardized incidence rates in Connecticut residents, 1935-39 to 1990-94, for the 10 types of cancer that were most common in 1990-94.

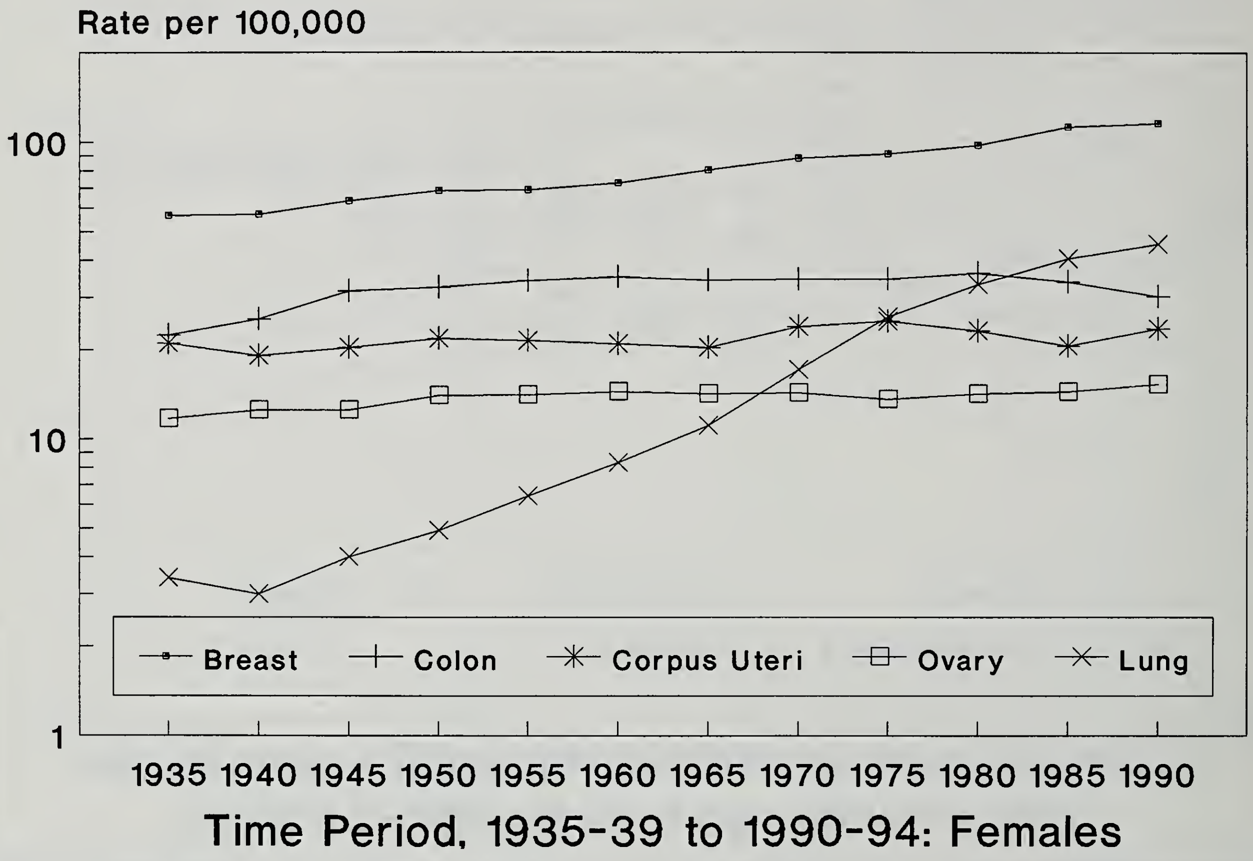

Figure 3.—Females: Breast, colon, corpus uteri, ovary, lung.

alcohol use, excessive exposure to ultraviolet radiation, and overweight. Because 90% of the U.S. population visits a physician each year, primary-care physicians could play a potentially greater role in primary prevention involving health behavior change.[25-28] Special efforts may be needed for those patients who do not identify smoking cessation as important in improving their own health.[29]

In the 1994 Behavioral Risk Factor Surveillance System (BRFSS) survey in Connecticut, 20% of adults were current smokers and 24% were overweight.[30] Sex differences in temporal trends in lung cancer, and other epidemiologic research, suggest that females may be more susceptible than males to lung cancer at the same level of smoking;[31] more research is needed in this area. Additional etiologic research is also needed on the most common cancers (breast and prostate), which involve hormonal mechanisms and dietary or other environmental factors that are poorly understood; adolescent and even prenatal exposures require further study.[32] Although the most salubrious dietary regimen has not been defined, large fractions of several major cancers (including breast, prostate, and colorectal) may be attributable to dietary factors and greater intake of fruits and vegetables (as promoted by the Five-A-Day program) seems prudent.[33-36] In the 1994 BRFSS survey in Connecticut, only 28% of men and 39% of women consumed fruits and/or vegetables five or more times a day.[30] Reducing cancer incidence rates will be especially important as the baby-boom generation ages, contributing to increasing numbers of incident cancers[3] and to projected increases in expenditures for medical care (including Medicare costs for terminal care of cancer patients).[37]

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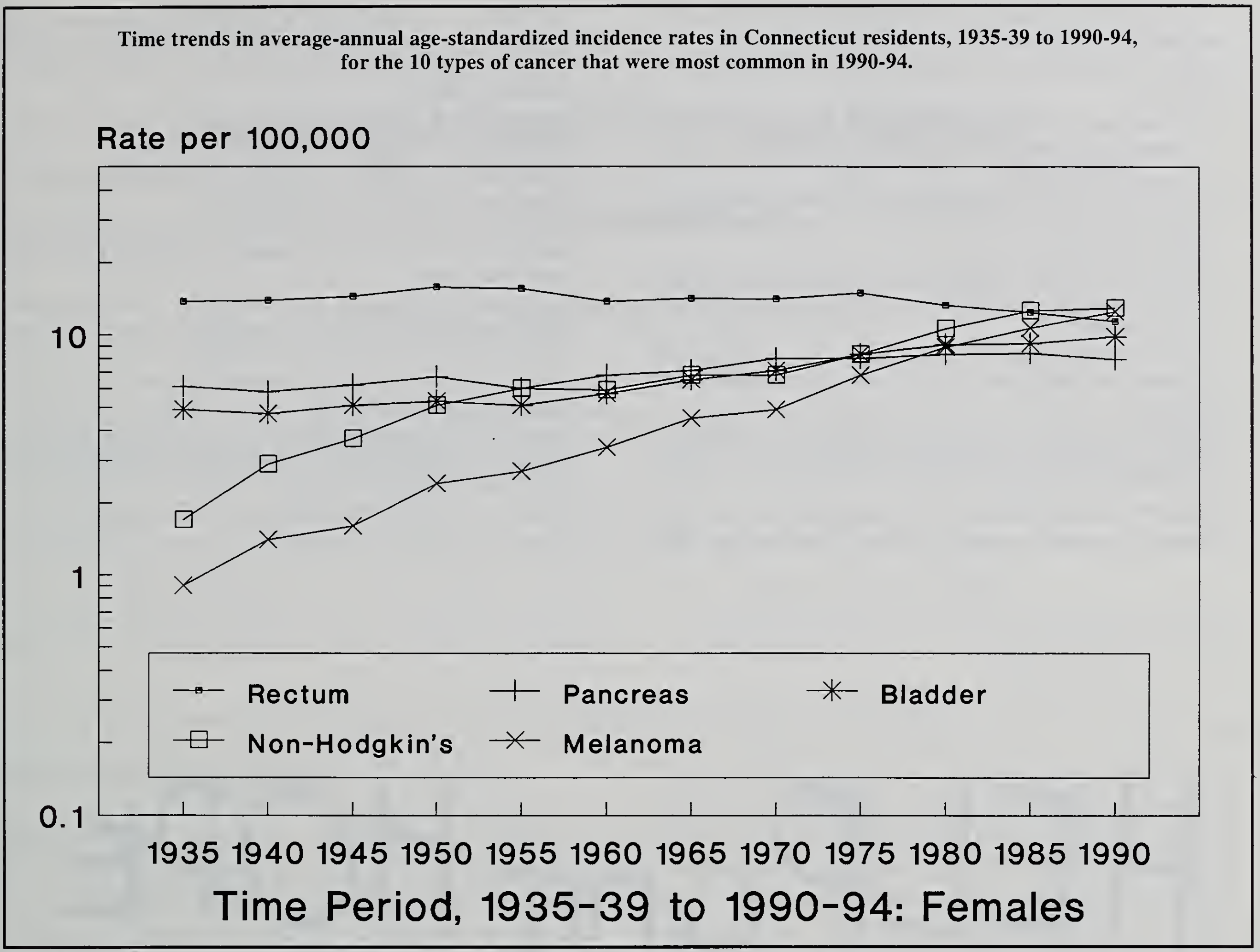
Time trends in average-annual age-standardized incidence rates in Connecticut residents, 1935-39 to 1990-94, for the 10 types of cancer that were most common in 1990-94.

Figure 4.—Females: Rectum, pancreas, bladder, non-Hodgkin's lymphoma, melanoma of skin.

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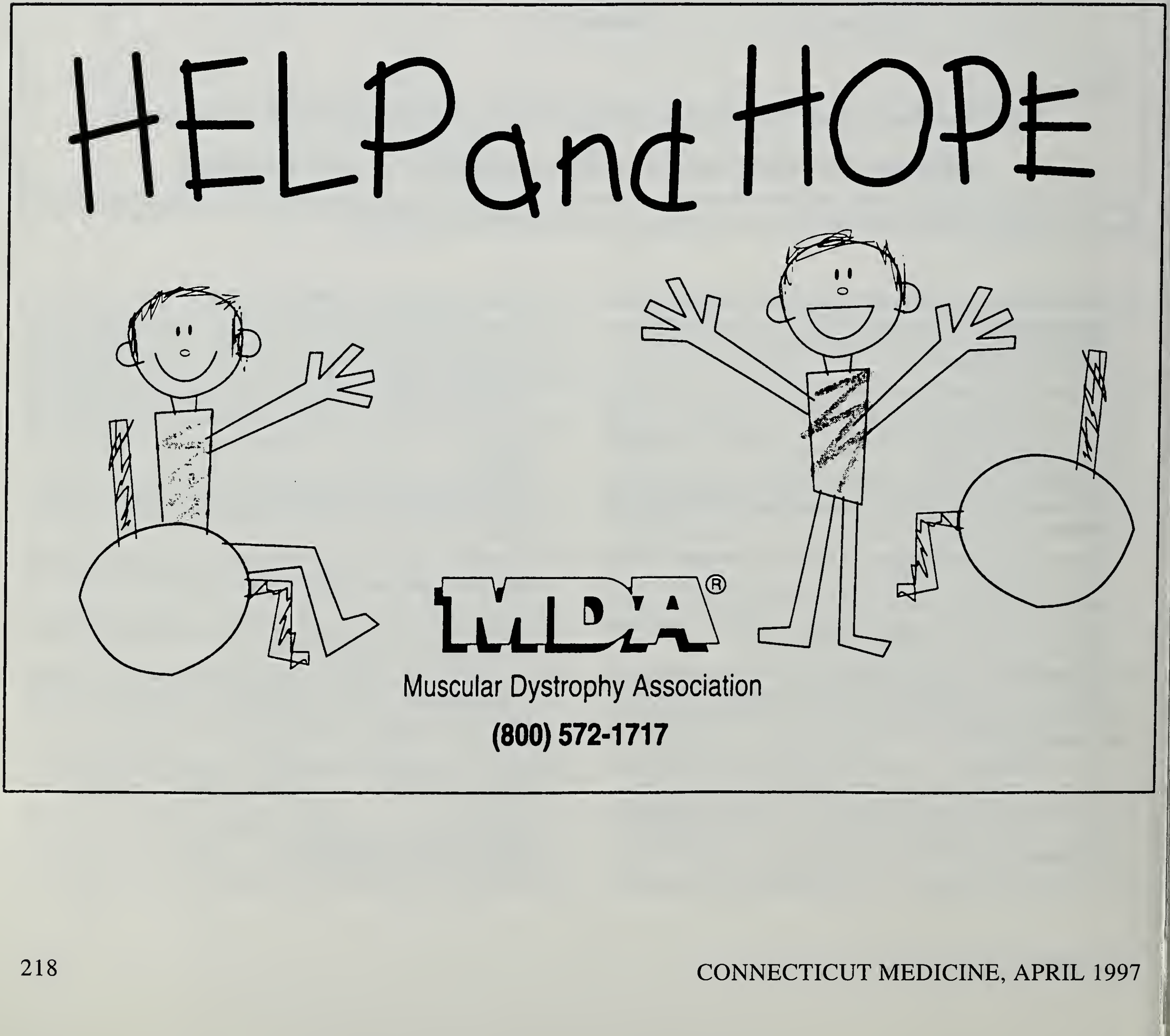

Muscular Dystrophy Association

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EPITOMES OF PROGRESS

Important Advances in Clinical Medicine

Chest Diseases

Ira Jeffry Strumpf, M.D., Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in chest diseases. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Chest Diseases of the California Medical Association, and the summaries were prepared under the direction of Ira Jeffry Strumpf, M.D., and the panel.

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Sedating Patients in Intensive Care Units

PROVIDING appropriate sedation has assumed increased visibility and importance in the management of critically ill patients. More invasive forms of ventilatory support, such as inverse-ratio ventilation, extracorporeal membrane oxygenation, and liquid ventilation, as well as modern intensive care unit (ICU) supportive care require close attention to the quality and quantity of sedation.

Increasing recognition of the risks of excessive and insufficient sedation has taken on new importance. The addition of new agents, such as propofol, to critical care and the "rediscovery" of established agents such as diazepam and haloperidol have allowed a better fit of drug therapy for these patients. In addition to having a thorough knowledge of the indications, effects, pharmacokinetics, costs, and the adverse effects of these drugs when used in intensive care settings, clinicians should be aware of two concepts unique to the critical care environment that will allow a better use of these agents in critically ill patients.

The first concept is that "sedation" in intensive care units is not simply defined. At any time, a patient may require varying amounts of anxiolytic, analgesic, anesthetic, and antipsychotic drugs. The most critically ill patients may require multiple agents for optimal sedation. Close titration is necessary to use the minimal amounts required for the desired effect and to avoid overdosage.

The second concept in achieving adequate sedation is that the most seriously ill patients undergo phases of illness that are fairly consistent among patients, although of varying durations. Patients with the systemic inflammatory response syndrome or the acute respiratory distress syndrome often progress through an acute resuscitation phase in which diagnosis and stabilization are occurring simultaneously, often under conditions of diagnostic uncertainty. This phase often gives way to a chronically critically ill phase that, although punctuated by episodes of crisis, is one of relative stability. The "recovery phase," often heralded by spontaneous diuresis, the resolution of capillary leak, and a rapid reduction in the need for mechanical ventilation, follows in survivors. The best strategies for sedation in each of these phases differ and may involve different agents, routes of administration, and therapeutic end points. As a result, it is rare in our ICU for these critically ill patients to remain on the same sedative drug therapy throughout all of the phases of their critical illness.

Classes of Agents

Benzodiazepines.—Benzodiazepines excel in providing amnesia and anxiolysis in intensive care. Most critically ill patients will require a benzodiazepine at some point during their care. The concept of an equally sedating dose becomes important when comparing the cost-effectiveness of agents because there are few, if any, clinically important differences in efficacy among benzodiazepines when using equivalent doses. Metabolites can be used to therapeutic advantage during the "chronically critically

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ill" phase of illness. Drugs such as diazepam have been successfully incorporated into the care of critically ill patients where the activity of the desmethyldiazepam metabolite may allow lower diazepam dosing by constant infusion or the intermittent administration of an intravenous bolus. In patients with substantial liver impairment, some advantage may exist to the use of lorazepam with its limited metabolism and lack of active metabolites.

Narcotics.—Narcotics are the drugs of choice to provide analgesia in intensive care settings. Morphine sulfate and fentanyl citrate are the agents most commonly used. When used in single doses, fentanyl, a synthetic opioid, has an apparently short half-life due to a rapid redistribution from central nervous system receptors. When used repeatedly or by continuous infusion, these redistribution sites become saturated and convert fentanyl into a longer lasting opioid. When combined with a benzodiazepine, stronger sedation is achieved at lower doses of both agents. Narcotics and benzodiazepines are often combined in "conscious sedation" techniques for short procedures in intensive care.

Propofol.—Propofol (2,6-diisopropylphenol) is the prototype of a new class of general anesthetics. When used in intensive care settings, the usual sedative dose is 1 to 4 mg per kg of body weight per hour. At these doses, amnesia may be suboptimal, and additional analgesic agents may be required. High doses of propofol into the general anesthetic range usually signal the need for an additional analgesic or antipsychotic agent. The short effective half-life of the drug (minutes) is due to its rapid clearance from the bloodstream by the liver. Because propofol is dissolved in a soybean oil emulsion (Intralipid) for administration, this must be accounted for in any nutritional supplementation. The advantages of propofol lie in its precision in producing a specific level of consciousness and its short duration of action. Applications appear to be for short-term use in postoperative care, especially after coronary artery bypass grafting, in cases of drug overdose and status asthmaticus, and for episodic use during phases of critical illness where a precision of sedation or rapid changes between different levels of sedation are required.

Antipsychotic agents.—The antipsychotic agents haloperidol and droperidol are useful in the treatment of agitated delirium in intensive care settings (including "ICU psychosis"). Despite its not being labeled for continuous infusion by the Food and Drug Administration, many clinicians have success with continuous infusions of haloperidol at doses of 2 to 5 mg per hour. Haloperidol use may also potentiate the analgesic effects of the opioids. Possible limitations of these drugs include dystonic reactions and the neuroleptic malignant syndrome. Particular uses of these drugs include for patients with drug overdosage with toxic psychotic reactions and in those with the delirium that often occurs in chronically critically ill patients. Unlike the other agents, little respiratory depression is seen with the antipsychotics.

The complexity of providing optimal sedation justifies an explicit discussion of the "sedation plan" on daily rounds. The provision of sedation is multidisciplinary, requiring the informed input of nursing, respiratory care, and pharmacy personnel for optimal results. Institutions may wish to devise various combinations of agents useful in the most commonly encountered situations in their ICUs to serve as a starting point for treating patients. Most hospitals are now required to establish formal guidelines for therapeutic or diagnostic use of ""conscious sedation." The use of these drugs must fit the guidelines, which will help ensure their appropriate use, titration, and cost containment.

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New Rapid Tests for Tuberculosis

THE Centers for Disease Control and Prevention (CDC) has developed guidelines for laboratories regarding the detection, identification, and susceptibility testing of *Mycobacterium tuberculosis* in clinical specimens. One of the guidelines, the isolation and identification of *M tuberculosis* within 10 to 14 days, is a difficult standard to meet for many laboratories using current culture methods. The use of newly developed, rapid direct amplification tests, or nucleic acid amplification assays, would not only meet but exceed the guideline. In addition, these direct amplification tests may be positive when culture does not show growth or is contaminated.

What is the appropriate use of the rapid diagnostic tests for tuberculosis? This question cannot yet be definitively answered for several reasons:

- These tests are new and have not been fully evaluated in all situations;
- They are the first generation of a new group of tests for the disease; and
- Most important, clinicians and laboratorians disagree about whether tuberculosis is primarily a clinical diagnosis or a laboratory diagnosis.

Several new tests in various stages of development can be classified as rapid diagnostic tests for tuberculosis. They can be divided into two types: those that detect growth and those that detect the nucleic acids of *M tuberculosis.*

Media allow for bacterial replication to occur so that growth can be detected. All of the newer growth media inhibit the growth of bacteria other than mycobacteria. Older media depend on inspection to detect colonies. The newer ones use either chemical or radiometric means to detect the production of carbon dioxide or other gases or the consumption of oxygen by various means. The time required for growth and identification varies with the number of organisms in the inoculum, but the mean is about 20 days, ranging from four to 76 days.

Several methods are under development to detect nucleic acids of *M tuberculosis*. Only two in the United States, the Gen-Probe MTD (Gen-Probe Incorporated, San Diego, California) and the AMPLICOR *Mycobacterium tuberculosis* test (Roche Diagnostic Systems, Inc. Branchburg, New Jersey), have been approved by the Food and Drug Administration for use, but only for respiratory specimens that are smear-positive for acid-fast bacilli.

Laboratory-based studies of the two assays have demonstrated 77% and 80% for overall sensitivity and 96% and 99% for overall specificity. Positive predictive values have been 57% and 85%, with negative predictive values of 99%. The assays have been used on different patients, and because the confidence intervals for the results overlap, neither manufacturer can claim superior performance for its test.

Because these tests do not yet perform ideally in all circumstances, they cannot be considered as stand-alone tests. Laboratory and clinical factors must be considered together, and the overall and recent experience of clinical laboratories must be examined. Clinicians must be careful to correlate the direct amplification test results with the clinical aspects of each case; sometimes multiple testing or alternative types of information are of great value.

The direct amplification tests are an important advance in the diagnosis of tuberculosis. They do impose more work on laboratories and require more wisdom of clinicians, but if used properly, they can improve our ability to diagnose this disease, initiate therapy, and interrupt its transmission earlier than ever before. This can result in cutting the spread of tuberculosis in our community and the costs of health care.

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*The author has the following commercial affiliations: *Contracts:* Pfizer, Inc; Janssen Pharmaceutica, Inc; and Gen-Probe, Inc. *Speakers' bureau:* Pfizer, Inc; Bayer Pharmaceuticals; and Hoechst Marion Roussel, Inc. *Consultant:* Gen-Probe, Inc.

Update on Treatment of Coccidioidomycosis

OF patients infected with the fungus *Coccidioides immitis,* about two thirds will recover uneventfully, and in a third, symptomatic, self-limited pneumonitis will develop. Chronic coccidioidomycosis will develop in about 1% in the form of either progressive pulmonary or disseminated disease. The most common sites of extrapulmonary infection are the skin, bone, joints, lymph nodes, and central nervous system. Comprehensive review articles covering the clinical manifestations, diagnosis, and treatment of coccidioidomycosis have appeared recently, and, therefore, the focus of this discussion will be on advances that are likely to shape therapy in the coming years.

The development of a robust cellular immune response appears essential for a host to eliminate this fungus. Consequently, immunocompromised patients are at an increased risk for a progression to chronic forms of coccidioidomycosis and, should this progression occur, will require prolonged (possibly lifelong) therapy. Such patients typically have high titers of complement-fixing anticoccidioidal antibodies and lack delayed-type hypersensitivity on skin testing. Similarly, patients who are without overt immunodeficiency and go on to have persistent disease commonly display this combination of anergy and increased antibody titers, perhaps reflecting a selective inability to mount an effective immune response to this pathogen.

At present, the cornerstones of antifungal therapy are amphotericin B and the triazoles fluconazole and itraconazole. The incentive to use the triazoles is great because they are relatively nontoxic, well tolerated, and their use obviates the need for intravenous therapy. There have been no comparative trials of amphotericin B *vs* the azoles in the treatment of coccidioidomycosis, however, and the triazoles are not currently approved by the Food and Drug Administration for the treatment of this disease.

Although the vast majority of acute infections will resolve on their own, recent data from a nonrandomized trial suggest both that the primary illness may be truncated and that complications may be averted by early treatment of acute disease with an abbreviated course of a triazole (400 mg daily for one to six months). Such a practice seems prudent for those patients at risk for dissemination or with severe primary infections.

If the workup suggests progressive pulmonary or extrapulmonary disease, treatment is always indicated and invariably must be prolonged. Because meningitis can

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have devastating consequences and requires particularly aggressive therapy, it is imperative that its presence be ascertained before formulating a therapeutic plan. Symptoms of coccidioidal meningitis are often subtle, and the threshold for performing a lumbar puncture must be low.

Extensive data now demonstrate the efficacy of using itraconazole and fluconazole for the treatment of progressive pulmonary and disseminated coccidioidomycosis. A recent trial, however, documented a high relapse rate, occurring in nearly 40% of patients, following the discontinuation of fluconazole therapy. A combination approach featuring initial surgical resection or the debridement of affected tissue when feasible—for example, for bronchopleural fistula or osteomyelitis—the instillation of amphotericin B locally when practical (especially with meningitis), and concurrent oral therapy with a triazole has gained favor. Once a response with combination therapy has been achieved, azole therapy alone is continued. Recent analyses have suggested that patients with meningitis and perhaps all patients with the acquired immunodeficiency syndrome and a diagnosis of progressive or disseminated coccidioidomycosis should continue on suppressive azole therapy for life.

Progress is being made on improving the antifungal armamentarium. Existing agents are being reformulated, such as the lipid forms of amphotericin B, which may allow for treatment with reduced toxicity. Second, itraconazole has been reformulated as an oral solution using the carrier cyclodextrin, and this appears to confer increased bioavailability. In addition, new triazole compounds continue to be developed and evaluated, such as SCH 56592. Furthermore, antifungal agents representing entirely new classes of compounds are nearing clinical trial. Nikkomycin Z prevents cell wall synthesis in a variety of fungi, including *Coccidioides immitis*, by inhibiting the enzyme chitin synthase. It appears fungicidal in studies of animals and is active when given orally. Echinocandins, such as LY303366, which disrupt cell wall synthesis by inhibiting the enzyme β-(1,3)glucan synthase, also appear promising. Immune modulators, which may ultimately allow the manipulation of the immune response in patients with disseminated disease, include interferon gamma and interleukin-12. Finally, progress is being made in the molecular characterization of the coccidioidal antigens that are recognized during the humoral and cellular immune responses to infection. In addition to providing reagents that will allow easier diagnosis of infection, these studies should provide information crucial for the development of an effective vaccine against infection.

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Role of Thoracoscopy in Thoracic Surgical Practice

THORACOSCOPY or the more commonly used term, video-assisted thoracic surgery (VATS), refers to the use of minimally invasive operative techniques employing television guidance to accomplish thoracic surgical procedures previously requiring thoracotomy. The primary aim of this approach is to avoid the perioperative morbidity associated with open thoracotomy. Most diagnostic pleural procedures and simple therapeutic VATS procedures, such as wedge resection of the lung, use two to three small (2.5-cm [1-in]) incisions to achieve access to the thoracic cavity through the rib interspaces. These sites of access allow the introduction of the thoracoscope camera, hand instruments, and endoscopic stapling tools. More complex procedures such as pulmonary lobectomy, esophageal procedures, and mediastinal procedures such as thymectomy usually need additional sites of intercostal access.

The following VATS approaches are accepted in present-day thoracic surgical practice.

Many pleural effusions remain idiopathic, despite attempts at diagnosis with less invasive techniques such as thoracentesis or pleural biopsy. Other malignant or benign pleural effusions may resist tube thoracostomy management alone. Video-assisted thoracoscopic techniques are successful in diagnosing 90% of cases of idiopathic effusion (most of which are malignant). Loculated pleural effusions, hemothoraces, and thoracic empyemata, for which tube thoracostomy treatment has failed, are also readily controlled with VATS, with the added benefit of avoiding thoracotomy in more than 80% of patients.

The VATS approach is readily suited as an adjunct to cervical mediastinoscopy in the evaluation of mediastinal adenopathy. In patients with this disorder, VATS is an alternative to the anterior minithoracotomy procedure for evaluating adenopathy out of reach of cervical mediastinoscopy. This approach can also be a good alternative to thoracotomy for managing posterior mediastinal tumors and mediastinal cysts and for doing thoracic splanchnicectomy and vagotomy.

Indeterminate noncalcified pulmonary nodules and undiagnosed diffuse pulmonary infiltrates are common thoracic problems often requiring surgical biopsy. Until the development of VATS, an open thoracotomy with its attendant morbidity was required. Closed-lung biopsy done with VATS techniques is a preferred approach to many of these processes. Although most pulmonary infiltrates are amenable to VATS, candidate pulmonary nodules for the VATS approach should be small (< 3 cm in diameter), located in the outer third of the lung parenchyma, and without endobronchial extension. Among patients with low surgical risk, the early use of the VATS excisional biopsy approach avoids the time delay in management, technical complications, expense, and the unacceptable false-negative diagnostic rate associated with percutaneous and transbronchial biopsy procedures. Diagnostic accuracy is excellent, postoperative mortality negligible, and hospital stays usually about three days. When the lesion is diagnosed as being benign or metastatic malignant disease, thoracotomy can usually be avoided. If intraoperative frozen section analysis identifies a primary lung cancer, conversion to a muscle-sparing minithoracotomy or the use of the VATS technique to accomplish anatomic lobectomy and mediastinal nodal dissection is indicated.

Pulmonary lobectomy and mediastinal nodal staging remain the gold standard of management for stage I lung cancer, but VATS wedge resection of peripheral small lung cancers can be an alternative to open surgical resection for patients with impaired cardiopulmonary reserve. Patient survival has been equivalent to that in patients with similar stage disease having lobectomy; the local recurrence rate is higher, however. As a compromise procedure, it appears to be reasonable. Nevertheless, we use this approach only with poor-risk patients who could not withstand the rigors of thoracotomy and lobar resection.

Lung volume reduction surgery has been shown to restore a more normal elasticity of emphysematous lungs and to improve the efficiency of the muscles of respiration. This operation has been described using either an open sternotomy approach or VATS techniques. Equivalent functional improvement has been noted with either approach, but the use of VATS avoids the morbidity associated with dividing the sternum.

Video-assisted thoracic surgical procedures are a growing technical component in the operative armamentarium of most thoracic surgeons today. Some centers are using VATS techniques in nearly 60% of their thoracic surgical interventions. It is a good approach to a variety of thoracic surgical interventions previously requiring large, painful thoracotomies for definitive management.

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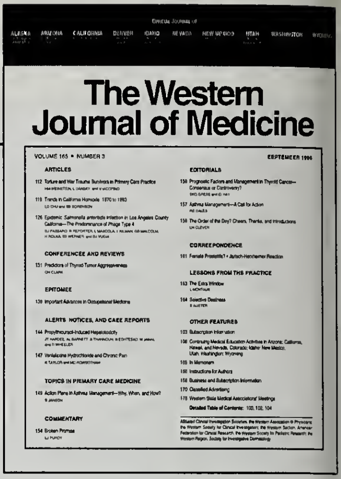

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DRUG INFORMATION UPDATE: HARTFORD HOSPITAL

Ceftazidime to Cefepime Formulary Switch: Pharmacodynamic and Pharmacoeconomic Rationale

ROBERT C. OWENS, JR., PHARM.D., PAUL G. AMBROSE, PHARM.D.,
AND RICHARD QUINTILIANI, M.D.

ALTHOUGH cefepime (Maxipime®, Bristol-Myers Squibb), introduced in 1996, is promoted as the first fourth generation cephalosporin available for clinical use, it shares close similarities to ceftazidime. Similar with ceftazidime, but unlike the third-generation cephalosporins (eg, ceftriaxone, ceftizoxime, cefotaxime), cefepime exhibits impressive microbiological activity against *Pseudomonas aeruginosa*. Thus, cefepime is an alternative choice to ceftazidime for the treatment of serious nosocomial infections, such as hospital-acquired pneumonia.

Microbiological Activity

Comparative antimicrobial activities of cefepime and ceftazidime against important pathogens are presented in Table 1.[1] It appears that cefepime has relatively lower minimal inhibitory concentration (MIC) values compared with ceftazidime against most gram-positive aerobes, especially *Streptococcus pneumoniae* and *Staphylococcus aureus*. Compared with ceftazidime, cefepime has similar microbiological activity against most gram-negative organisms.

Abbreviations Used In Text
MIC = minimal inhibitory concentration

Notable exceptions to this include *Enterobacter* spp. and *Citrobacter freundii*, organisms that demonstrate significantly greater sensitivity to cefepime compared with ceftazidime. Cefepime, unlike ceftazidime, has been shown to have enhanced stability in the presence of Bush-1 Group β-lactamases produced by *Enterobacter* spp. and *Citrobacter freundii*.[1-4] Furthermore, additional studies demonstrate cefepime's minimal affinity and intrinsic stability against Bush-1 Group β-lactamases.[5,6] When induced, these β-lactamases render all currently available penicillins and cephalosporins inactive.

Pharmacokinetics and Pharmacodynamics

Pharmacokinetic parameters are presented in Table 2. Applying pharmacodynamic principles, or the integration of pharmacokinetic and microbiological properties of antimicrobial agents, to newly introduced cephalosporins provides useful information for clinicians. Cefepime, like other β-lactams, kills bacteria in a time-dependent fashion. This means that the time the drug concentration remains above the MIC of the infecting pathogen is an important determinant and predictor of clinical success. For these agents, a reasonable time period to exceed the MIC is approximately 50% of the dosing interval.[7]

For both cefepime and ceftazidime, against indicated organisms that include *Pseudomonas aeruginosa*, the time above the MIC is greater than 50% over a 12-hour dosing interval (Fig. 1). Thus, the major difference between these agents is essentially the dosing intervals. In patients with normal renal function, cefepime may be dosed on a twice-daily basis, while ceftazidime on a thrice-daily regimen.

Pharmacoeconomics

For the following comparison, several assumptions are made and are based upon data specific for Hartford Hospital. First, the costs associated with preparation and

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This series on Drug Information Updates from Hartford Hospital are provided by the Drug Information Center, Department of Pharmacy Services, Hartford Hospital. Editors: Moses Sing Sum Chow, Pharm.D., and Robert A. Quercia, M.S., R.Ph. Editorial Board: D. Drezner, M.D., G. Gousse, M.S., R. Quintiliani, M.D., and J. Laut, M.D.

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Table 1.—Comparative *In Vitro* Microbiological Activity of Cefepime and Ceftazidime for Selected Organisms

Organism	**Cefepime MIC90 (μg/mL)**	**Ceftazidime MIC90 (μg/mL)**
Streptococcus pneumoniae	0.06	0.5
Staphylococcus aureus (methicillin sensitive)	4	16
Staphylococcus epidermidis (methicillin sensitive)	4	16
Citrobacter freundii	2	128
Enterobacter cloacae	0.5	4
Pseudomonas aeruginosa	8	8

administration of a cephalosporin antibiotic are $3.36 per dose based upon a time-motion study conducted at Hartford Hospital. These costs include: labor, eg, nursing, pharmacy technician, and pharmacist time ($1.02 per dose) and supply costs, eg, labels, ADD-Vantage™ bag, tubing, syringes, heparin and saline flush, and clave adapters ($2.34 per dose). Second, 47, 48, and five percent of patients have normal (GFR >60 mL/min), mild to moderately impaired (GFR 30-60 mL/min), and moderate to severely impaired (GFR < 30 mL/min) renal function, respectively. This is based on patient demographic data specific for our institution. Finally, acquisition costs for each product are as follows: ceftazidime 1 g, $9.29, and 2 g, 18.63; cefepime 1 g, $11.73, and 2 g, $22.38.

Based upon the this information and current usage patterns, drug acquisition costs decrease approximately $34,494 and preparation and administration costs decrease $21,077, annually. Of the decrease in preparation and administration costs, $14,679 are savings that are realizable from an accounting perspective. The remaining portion is savings in labor costs that may not be realized as an expense reduction. Thus, if cefepime replaced ceftazidime on the Hartford Hospital formulary and direct drug acquisition and realizable administration expense reductions are totaled, the potential savings is $51,173, annually.

Pharmacoeconomic analyses that consider only direct drug acquisition, preparation, and administration costs are not valid. To complete the pharmacoeconomic analysis, one must also consider comparative efficacy, cost of treating therapeutic successes and failures, and the costs associated with the treatment of adverse drug reactions. Comparative efficacy studies have shown similar clinical outcomes in both nosocomial and community-acquired infections.[9-11] Cefepime and ceftazidime have comparable safety profiles,[11,12] similar to other cephalosporin agents that are very well tolerated and are associated with infrequent adverse events.

Therapeutic Substitution

The Therapeutics Committee at Hartford Hospital has approved the following automatic conversion policy: beginning 17 March 1997 all orders for ceftazidime 1 g and 2 g every 8 hours will be changed by a pharmacist to cefepime 1 g or 2 g every 12 hours, respectively. Furthermore, all orders for ceftazidime 1 g or 2 g every 12 hours will be converted to cefepime 1 g or 2 g every 24 hours, respectively.

Conclusion

Based upon pharmacodynamic principles, clinical outcome data and information from our pharmacoeconomic analysis, cefepime is at least as effective and offers a cost-beneficial advantage over ceftazidime, and is the basis for the interchange program at Hartford Hospital.

Table 2.—Pharmacokinetic Parameters of Cefepime and Ceftazidime

	Cmax (μg/mL)	**Half-Life (Hours)**	**AUC (hr•μg/mL)**	**Vss (L)**	**Clearance (mL/min)**	**% Urinary excretion**	**% Protein binding**
Cefepime	82	2.3	149	18	120	85	20
Ceftazidime	69	1.8	133	18	115	85	10

Abbreviations: Cmax: peak serum concentration; AUC: area under the serum concentration time curve;
Vss: volume of distribution at steady state;

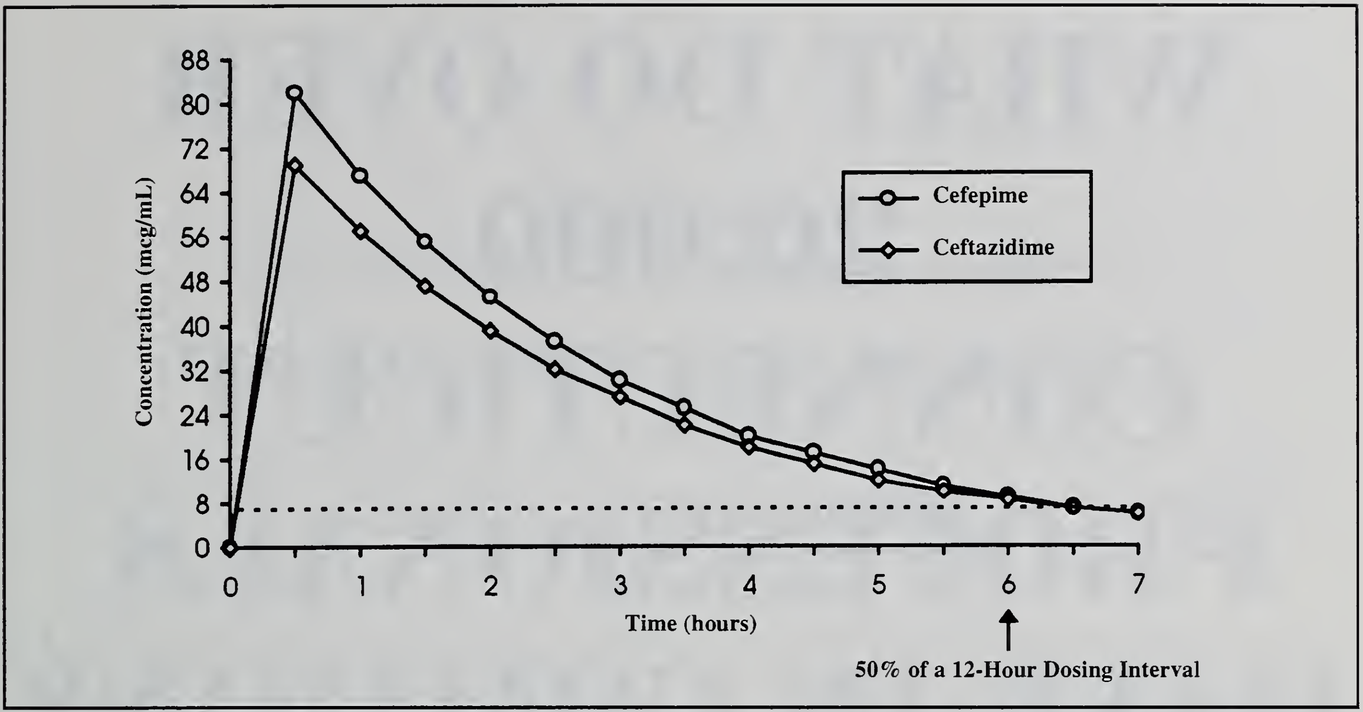

Figure 1.—Simulated serum concentration *vs* time curves following single dose administrations of Cefepime one gram and Ceftazidime one gram.

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Marijuana: Current Federal Law Remains in Effect

JO IVEY BOUFFORD, M.D. AND MARK M. RICHARD, ESQ.

A letter from the Department of Health and Human Services, Washington, D.C. 20201 and Department of Justice, Washington, D.C. 20530 to Timothy B. Norbeck, Executive Director, Connecticut State Medical Society

ON 30 December 1996, Barry R. McCaffrey, Director of the Office of National Drug Control Policy, Attorney General Janet Reno, and Donna E. Shalala, Secretary of the Department of Health and Human Services (HHS), announced the Administration's position regarding the recent passage of California Proposition 215 and Arizona Proposition 200. Among other things, they stated that the Department of Justice and HHS would follow up with a letter to national, state, and local medical organizations such as yours with respect to the Administration's position.

We are concerned that several misperceptions have developed concerning the federal government's response to the two Propositions. Before their enactment, nothing in federal law prevented a physician, in the context of a legitimate physician-patient relationship, from merely discussing with a patient the risks and alleged benefits of the use of marijuana to relieve pain or alleviate symptoms. This continues to be true.

The federal government recognizes that patients look to their physicians as their primary source of knowledge about a wide variety of potential health hazards and treatments. Thus, physicians are encouraged to talk with patients about their concerns and answer inquiries about any procedure, treatment, substance, or device that may affect a patient's health. Physicians are also encouraged to share their knowledge and their professional expertise regarding the risks, benefits, and legality of any potential medical treatment or modality. No "gag rule" stops physicians from engaging in these discussions.

Such discussions, however, have their limits. Physicians may not intentionally provide their patients with oral or written statements in order to enable them to obtain controlled substances in violation of federal law. Physicians who do so risk revocation of their DEA prescription authority, criminal prosecution, and exclusion from participation in the Medicare and Medicaid programs.

Federal law establishes specific criteria that every potential medication must meet before it can be sold to the public or prescribed by doctors. For decades, this process of federal drug approval has protected the American public from dangerous drugs and ineffective treatments, and has helped provide the public with a medical care system that is the envy of the world. This process must be preserved. What is and what is not a drug with an accepted medical use should continue to be determined through rigorous scientific testing.

To date, the scientific testing of marijuana has not demonstrated that marijuana is a safe and effective drug with an accepted medical use. We remain concerned that the weight of current scientific evidence shows that marijuana can significantly harm the central nervous, cardiovascular, respiratory, and immune systems, and can limit memory, perception, judgment, and the ability to drive a motor vehicle. In addition, marijuana smoke contains over 400 compounds, some of which are carcinogens and may be addictive.

The federal government is undertaking additional steps to analyze carefully the state of all available scientific knowledge about the risks and alleged benefits of marijuana for medicinal purposes. In January, the Office of National Drug Control Policy committed nearly $1 million to fund a comprehensive review by the Institute of Medicine of the National Academy of Sciences of the existing clinical, medical, and scientific knowledge of the

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JO IVEY BOUFFORD, M.D., Acting Assistant Secretary for Health, Department of Health and Human Services; MARK M. RICHARD, Esq., Acting Assistant Attorney General, Criminal Division, Department of Justice.

health effects and potential medical use of smoked marijuana. Moreover, on 19 and 20 February 1997, the National Institutes of Health held a two-day workshop at which nongovernment experts in fields such as cancer treatment, infectious diseases, neurology, and ophthalmology reviewed existing research about marijuana, assessed what is known about its possible therapeutic potential, and discussed the factors to be taken into account in undertaking clinical research of marijuana. If and when there is adequate scientific evidence to support a reclassification of marijuana under the Controlled Substances Act, rulemaking proceedings could be used to change marijuana's current classification as a Schedule I controlled substance. However, unless and until that occurs, current federal law remains in effect.

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THE MEDICAL LETTER

Drugs for Treatment of Peptic Ulcers

MOST peptic ulcers not caused by nonsteroidal anti-inflammatory drugs (NSAIDs) are now thought to be associated with infection of the gastric mucosa by the gram-negative bacilli *Helicobacter pylori*. The majority of NSAID-related ulcers are gastric. *H. pylori* have been associated with both duodenal and gastric ulcers. Eradication of *H. pylori* promotes healing and markedly decreases recurrence of duodenal and gastric ulcers (Soll AH, *JAMA* 1996; 275:622).

ANTIBACTERIAL TREATMENT—Diagnosis— Until recently, testing for active *H. pylori* infection required endoscopy and a biopsy of the gastric antrum (Cutler AF, et al, *Gastroenterology* 1995; 109:136). Serologic tests may be helpful in the initial diagnosis but are not reliable in documenting eradication. Now the U.S. Food and Drug Administration (FDA) has approved a non-invasive breath test, the *Meretek UBT*, which can be used to test for eradication but may cost about $300, according to *Medical Letter* consultants. To use the test, the patient drinks a liquid containing ^{13}C urea (which is not radioactive) and breathes into a container, which is then sent to a laboratory; in the presence of *H. pylori*, bacterial urease hydrolyzes the urea, releasing $^{13}CO_2$, which can be detected by a mass spectrometer. The new test appears to be highly specific, but can yield 5% to 10% false-negative results.

Treatment—Antibacterial agents that have been used to treat *H. pylori* infection include bismuth subsalicyiate (*Pepto-Bismol*, and others), amoxicillin (*Amoxil*, and others), clarithromycin (*Biaxin*), metronidazole (*Flagyl*, and others) and tetracycline (*Achromycin V*, and others). Various combinations of one, two, or three antimicrobial drugs with an H$_2$-receptor blocker or a proton pump inhibitor have been studied. Regimens that have included at least two antimicrobial drugs active against *H. pylori* for one or two weeks have been successful, in various reports, in eradicating the organism in about 60% to 95% of patients. Use of clarithromycin plus omeprazole, followed by two weeks more of omeprazole, has eradicated *H. pylori* in about 60% to 80% of patients. Some studies have used clarithromycin and omeprazole (or lansoprazole) plus metronidazole (or amoxicillin) for one to two weeks with eradication rates of 90% or higher (Markham A, McTavish D: *Drugs* 1996; 51:161). Antimicrobial resistance among *H. pylori* has been reported frequently to metronidazole and clarithromycin, rarely to tetracycline and not at all to amoxicillin.

Adverse Effects—Both metronidazole and tetracycline frequently cause mild gastrointestinal disturbances. Amoxicillin may cause diarrhea. Bismuth subsalicylate temporarily turns the tongue and stool black and can cause tinnitus. Clarithromycin can also cause gastrointestinal symptoms; they are less frequent than with metronidazole or tetracycline, but clarithromycin can cause a disturbance in taste that some patients find intolerable.

Drugs Interactions—Clarithromycin can decrease the metabolism and increase serum concentrations of terfenadine (*Seldane*) or astemizole (*Hismanal*), which can cause serious ventricular arrhythmias (*Medical Letter Handbook of Adverse Drug Interactions*, 1996:74). Tetracycline and metronidazole can interact with many other drugs (*Medical Letter Handbook of Adverse Drug Interactions* 1996:219,266).

Choice of Regimens—The effectiveness of different combinations of drugs in eradicating *H. pylori* depends on the antibacterial activity of the drugs and the resistance patterns of the organisms, the patient's history of exposure to antibiotics, and the patient's ability to tolerate the drugs' adverse effects and to take a large number of pills. For many patients, better tolerated, shorter regimens requiring fewer pills per day may prove more effective than more complicated regimens with higher eradication rates in clinical trials.

H$_2$-RECEPTOR ANTAGONISTS—H$_2$-receptor antagonists inhibit the action of histamine at the histamine H$_2$-receptor of the parietal cell, decreasing both basal and food-stimulated acid secretion. The four drugs in this class marketed in the USA for treatment of peptic ulcers are all about equally effective. All four of these drugs are available over-the-counter in half the prescription dosage for treatment of heartburn.

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Some Drug Regimens for *H. Pylori*

Drugs	**Daily Dose**	**Duration**	**Cost**[1]
*Bismuth subsalicylate (generic)	2 tablets (525 mg) qid	2 weeks	$10.38
+ Metronidazole (generic)	250 mg qid	2 weeks	1.85
+ Tetracycline (generic)	500 mg qid	2 weeks	3.49
+ Ranitidine (*Zantac*)[2]	150 mg bid	2 weeks	44.64
			$60.36
Helidac Therapy[3]		2 weeks	77.70
+ Ranitidine (*Zantac*)[2]	150 mg bid	2 weeks	44.64
			$122.34
*Clarithromycin (*Biaxin*)	500 mg tid	2 weeks	$136.91
+ Omeprazole (*Prilosec*)	40 mg once	2 weeks	101.64
followed by Omeprazole	20 mg once	2 weeks	50.82
			$289.37
Clarithromycin	500 mg bid	10 days	65.20
+ Omeprazole	20 mg bid	10 days	72.60
OR Lansoprazole (*Prevacid*)	15 mg bid	10 days	67.17
+ Metronidazole	500 mg bid	10 days	1.37
OR Amoxicillin (generic)	1 gram bid	10 days	9.18
			$133.74-146.98
*Ranitidine bismuth citrate (*Tritec*)[4]	400 mg bid	2 weeks	$48.72
+Clarithromycin	500 mg tid	2 weeks	136.91
followed by ranitidine bismuth citrate	400 mg bid	2 weeks	48.72
			$234.35

*FDA-approved regimens

[1] Cost to pharmacist based on wholesale price (AWP or HCFA) listings in Drug Topics Red Book 1996 and December Update.

[2] Or any other H_2-receptor antagonist.

[3] Helidac Therapy is supplied as 14 blister cards, each containing eight 262.4-mg bismuth subsalicylate tablets, four 250-mg metronidazole tablets and four 500-mg tetracycline

Adverse Effects—Severe adverse effects are uncommon with H_2-receptor blockers, but headache, lethargy, confusion, depression and hallucinations can occur. Rarely, these agents have been associated with hepatitis, hematology toxicity or dystonia. Cimetidine in particular may act as an anti-androgen and cause reversible impotence and gynecomastia.

Drug Interactions—Cimetidine inhibits the activity of hepatic cytochrome P-450 enzymes and may interfere with hepatic metabolism of other drugs. Clinically significant effects have occurred when cimetidine was used with P-450-metabolized drugs with a narrow therapeutic-to-toxic ratio, such as theophylline, warfarin (*Coumadin*, and others), phenytoin (*Dilantin*, and others) or lidocaine (*Xylocaine*, and others) (*Medical Letter Handbook of Adverse Drug Interactions*, 1996, page 76). Ranitidine, famotidine and nizatidine are less likely to interfere with hepatic metabolism of P-450-metabolized drugs, but any H_2-blocker may decrease the absorption of drugs that require gastric acidity for absorption, such as ketoconazole (*Nizoral*).

PROTON PUMP INHIBITORS—Omeprazole (*Prilosec—Medical Letter* 1990; 32:19) and lansoprazole (*Prevacid—Medical Letter* 1995; 37:63) bind to the proton pump of the parietal cell, inhibiting secretion of hydrogen ions into the gastric lumen. Proton pump inhibitors relieve pain and heal peptic ulcers more rapidly than H2-antagonists (Maton P: *N Engl J Med* 1991; 324:965; Spencer CM, Faulds D: *Drugs* 1994; 48:404). Doses of 20 to 40 mg/day of omeprazole or 30 mg/day of lansoprazole inhibit more than 90% of 24-hour acid secretion, compared to 50% to 80% with standard doses of H_2-antagonists. With higher doses, acid inhibition is nearly complete. Both omeprazole and lansoprazole have a short

Other Drugs for Peptic Ulcers

Drug	Dosage	Cost
H_2-receptor antagonists		
Cimetidine	400 mg bid	
generic price		\$23.72
Tagamet (SK Beecham)		96.30
Famotidine—*Pepcid* (Merck)	20 mg bid	95.85
Nizatidine—*Axid* (Lilly)	150 mg bid	96.00
Ranitidine—*Zantac* (Glaxo)	150 mg bid	95.66
Proton-pump inhibitors		
Lansoprazole—*Prevacid* (TAP)	15 mg once	100.75
Omeprazole—*Prilosec* (Astra Merck)	20 mg once	108.90
Other Drugs		
Sucralfate—*Carafate* (Marion Merrell Dow)	1 gram qid	91.96
Misoprostol—*Cytotec* (Searle)	200 μg qid	88.16
Antacids		
Magnesium hydroxide/aluminum hydroxide/simethicone		
Maalox Extra Strength Antacid (Ciba)	15 ml qid	24.74
Mylanta Double Strength (J & J Merck)	2 tablets qid	19.12

[1] Cost to the pharmacist for 30 days' treatment based on wholesale price (AWP) listings in *Drug Topics Red Book Update*, November 1996.

[2] FDA-approved only for prevention of NSAID-associated gastric ulcers.

serum half-life, but one dose of either acts for more than 24 hours. Both omeprazole and lansoprazole may have some intrinsic in vitro activity against *H. pylori*; the clinical significance of this antibacterial activity is unknown (Nakao M, et al, *Eur J Clin Microbiol Infect Dis* 1995; 14:391; Jonkers D, et al, *J Antimicrob Chemother* 1996; 37:145).

Adverse Effects—Proton pump inhibitors usually cause few adverse effects; nausea, abdominal pain, constipation, flatulence and diarrhea can occur. Gynecomastia has occurred rarely. Subacute myopathy, arthralgias, severe rashes and acute interstitial nephritis have been reported.

Drug Interactions—Omeprazole inhibits the activity of some hepatic P-450 enzymes, decreasing clearance of diazepam (*Valium*, and others), warfarin and phenytoin (*Medical Letter Handbook of Adverse Drug Interactions*, 1996, page 240). Both omeprazole and lansoprazole may also decrease serum concentrations of drugs that require gastric acidity for absorption such as ketoconazole (*Nizoral*) or itraconazole (*Sporanox*).

SUCRALFATE—An aluminum hydroxide complex of sucrose, sucralfate (*Carafate—Medical Letter* 1984; 26:43) has been effective for acute treatment of peptic ulcers and for prevention of relapse. Its mechanism of action is not clear, but it may protect the ulcer from exposure to acid. Multiple daily doses are required, and pain relief is not as effective as with a proton pump inhibitor or an H_2-blocker.

Adverse Effects—Only a small amount of sucralfate is absorbed from the gastrointestinal tract, and the drug has no known serious adverse effects. Constipation can occur. Plasma and urinary levels of aluminum may increase and in patients with chronic renal failure, aluminum toxicity might develop.

Drug Interactions—Sucralfate decreases absorption of lansoprazole, ketoconazole, fluoroquinolone antibiotics and other drugs; concurrent medications should be taken at least two hours before sucralfate.

MISOPROSTOL—Misoprostol (*Cytotec—Medical Letter* 1989; 31:21), a prostaglandin analog, can prevent gastric and duodenal ulcers in patients on chronic NSAID therapy (Raskin JB, et al, *Ann Intern Med* 1995; 123:344). Some clinicians prescribe misoprostol for patients taking NSAIDs who have a high risk of NSAID-associated complications, such as the elderly, those with multiple medical problems and patients with a previous ulcer.

Adverse Effects—Dose-related diarrhea is the most common adverse effect of misoprostol, but severe nausea can also occur, especially with the 200-μg dose; 100 μg is better tolerated and almost as effective. Like other prostaglandins, misoprostol is an abortifacient and is contraindicated during pregnancy.

ANTACIDS—Aluminum- and magnesium-containing antacids can be helpful in relieving the symptoms of duodenal ulcers. Antacids have many adverse interactions with other drugs. They may, for example, decrease absorption of H_2-blockers, decrease the effect of betablockers such as atenolol (Tenormin, and others), decrease absorption of metronidazole and other antibiotics, and decrease renal excretion and increase the toxicity of quinidine (*Medical Letter Handbook of Adverse Drug Interactions*, 1996, page 37).

CONCLUSION—When patients with active peptic ulcers are infected with *Helicobacter pylori*, use of antibacterial drugs in addition to an H_2-receptor antagonist or a proton pump inhibitor decreases the incidence of recurrence. The choice of an antibacterial regimen should be determined by the resistance patterns of the organisms, the patient's history of exposure to antibiotics, and the patient's ability to tolerate the drugs' adverse effects and to take a large number of pills. For many patients, better tolerated, shorter regimens requiring fewer pills per day may prove more effective than more complicated regimens with higher eradication rates in clinical trials.

CALL FOR PAPERS

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Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:
Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511

Physicians Needed for Camp *AmeriKids*

Camp *AmeriKids* is the domestic program of AmeriCares, which offers the opportunity to disadvantaged inner-city children infected with or affected by a life-threatening illness, to attend a summer camp program for one week during the month of August.

This week away in the country offers them a respite from the summer heat of the city, as well as a chance to forget about the illness, poverty, and crime that surrounds them on a daily basis.

Last year we were fortunate to have two pediatricians per week volunteer their time. Due to changes in residency programs or job situations, none of the six physicians from last year will be able to join us again this year, except for one.

If you are interested in becoming a volunteer at Camp *AmeriKids*, please call Caroline Kellersman, Assistant Camp Director, at **(800) 486-HELP.**

Please help us by spreading this information to any of your colleagues that may possibly be interested, we would be extremely grateful.

Guest Editorial

Managed Care
Shortchanges Children's Mental Health

OP-ED submitted to the *Hartford Courant* by Elaine Zimmerman.
Executive Director of the Connecticut Commission on Children

Susan is a teen who has been raped twice. She was hospitalized three times and diagnosed with posttraumatic stress and sleeping disorders. She entered therapy and had medication supervision paid for by managed care. She got back to school and returned to her peer group.

Then her insurance company said her care had run out. Her outpatient therapy was discontinued and she slid back into old patterns. She began to run away, stopped eating, and became hostile. The managed-care program denied hospitalization, saying she had used up her inpatient days.

Now this child is pregnant. This will cost the state many times over. We created this two-generational crisis to save inefficiencies and waste;we changed health-care delivery and embraced managed care. We offer some women mastectomies with no hospital stay and we limit hospitalization for new births. We have relegated our health to a timekeeper.

Among the changes in the system is a hidden one at the bottom of the pile: mental health.

Nobody wants to talk about pain, despair, or isolation. When these emotions are felt by children, confusion and pain can surface for both family and child. Thousands of children each year in Connecticut rely on the assistance of professionals to help them sort out sadness, developmental delays, rage, learning difficulties, experiences from abandonment and violence, and biochemical problems.

There are increasing casualties from relegating children's mental health to managed care. The push is to medicate, prevent hospitalization, and provide minimal intervention. Services are denied that could help prevent children from going into crisis. Limits are placed on the frequency, length, and type of treatment children may receive. Confidentiality is fragile. Families are pushed out; managed care does not offer family-centered treatment. There is no money for dealing with psychosocial issues influencing a child's success or failure in the classroom.

Citizens for Connecticut's Children and Youth in partnership with the Connecticut Federation of Families for Children's Mental Health, in a statewide study on children's mental health services, found that the system of care for children with mental health problems is failing. Problems of access to essential services are growing worse for both the insured and the uninsured child.

There are reports of increased harm occurring to children through shortened hospitalization, shortened treatment plans, and poor treatment plans. There are increasing restrictions on the length of stays for inpatient care, residential treatment, and outpatient care. There is inadequate follow-up for children starting medication while in crisis. There are numerous delays in authorization for payment, referrals, and placements, including cases of children showing suicidal and homicidal tendencies. Of most importance, the quality and standards of care have declined dramatically.

Families report that services to keep children out of more costly placements are not provided. Respite care, extended day treatment, emergency mobile psychiatric services, and in-home monitoring are not offered, even though these services decrease the need for out-of-home placement and inpatient psychiatric care. Some families are giving up their jobs to stay home with children.

Some parents are relinquishing custody of their children to the Department of Children and Families to get them long-term mental health services. Others who refuse to give up custody are turning to school districts for assistance, but schools already face limited resources with more demands. Some are taking their children to the Department of Mental Retardation; the children are not retarded, but they can get some services without the parents' having to give up custody.

Ethics and confidentiality concerns grow. Providers worry about the lack of protection for highly confidential information regarding children and their families. Professionals are required to offer the managed-care system more information than they wish, just to get the child the needed treatment.

We need to determine a clear definition of medical necessity for children's health care. We need to set benchmarks that managed-care plans must use to evaluate behavioral health services for children. We need to coordinate mental health services with others such as case management, family counseling, and transportation. We need to insure that managed care bases the duration of a child's treatment on the child's need.

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The state's managed-care Medicaid contracts will soon be up. We need to write in the details that we ignored when we first transferred authority. We knew we needed to improve efficiency, but we never meant to throw the baby out with the bath water.

We are not really saving dollars; we are just shifting dollars. Services that keep children out of the more costly placements are not offered. Instead of paying for respite care, we will play for institutionalizing. Instead of paying for prevention services, we will pay for the crime of the angry teenager when he becomes an adult. Instead of early intervention, we will pay for the pregnancy and the life of an unwanted child for years to come.

Profits may increase for some in the private sector, but we will lose children into the bargain.

Elaine Zimmerman
Executive Director
Connecticut Commission on Children

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New Haven, CT 06511

Camp *AmeriKids*

Founded by AmeriCares

Volunteer Information: Camp *AmeriKids* provides a summer camping experience for children who are infected with a life threatening illness and need special medical attention, as well as for children whose families are affected by such illnesses. This camp is offered to those who cannot afford commercial camp fees, and is provided at no cost to the participants.

This year, Camp *AmeriKids* will operate three sessions between 7 August and 30 August. We hope that you will be able to join Camp *AmeriKids* as a volunteer counselor for one (or all!) of these sessions.

Camp AmeriKids 1997 is:

- providing 360 medically and economically needy children between the ages of six and 12 with a summer camping experience.
- working with social service agencies in the inner cities of New York, New Jersey, and Connecticut to identify our campers.
- operating three week-long sessions between 5 August and 31 August at the Fresh Air Fund's Camp Hidden Valley in Fishkill, New York.
- recruiting volunteer camp counselors and medical personnel from teaching hospitals to staff each camp session.
- looking for your help through financial contributions and donations of supplies and equipment. Your support would enable Camp *AmeriKids* to give hundreds of children an otherwise unavailable summer experience.

If further information is needed please contact Caroline Kellersman, Assistant Camp Director, at **(800) 486-HELP.**

Commentaries

What Does the Dictionary Say?

The office bookcases of an ophthalmologist are not likely to carry a text on neonatal nutrition; nor, generally, will a book on molecular virology be found on the shelves of a psychiatrist's office. The world of medical information is too vast and too diversified to allow the average practitioner to own books representing every biomedical discipline. The personal library of each physician must necessarily be confined principally to the territory of his personal specialty. But one book is apt to be found in virtually every physician's library: a medical dictionary.

Dictionaries [from the Latin, *dictionarium*, meaning a book of sayings] are historically recent contrivances answering a pressing need for a list of equivalents between Latin and one of the Latin-based vernaculars. The first Latin-to-English dictionary, "*Promptorium Parvulorum*," was completed in 1440. The first dictionary offering English equivalents to English words, however, did not appear until Bailey's dictionary of 1730. This limited text selected words deemed to be unfamiliar while avoiding those in the current idiom. Its aim was to provide a vocabulary of "good" words. This effort to defend the English language from the corrupting influences of innovation was somewhat similar to parallel 18th-century attempts to standardize Italian and French, under the naive assumption that a mature language need no longer expand its inventory of words nor modify previously established meanings. The authoritative dictionary, thought Ambrose Bierce, was "A malevolent literary device for cramping the growth of a language and making it hard and inelastic."

In the centuries before the advent of printing, in the morning of modern English, these bilingual glossaries were narrowly confined to scriptural vocabulary and phraseology. They operated more as vehicles for translation than as resources for word-definition, and rarely did they offer meanings, pronunciation guides, or word-derivations. Some of these earlier dictionaries also offered translations of basic phrases and sentences from one language to another, a precursor of the modern tourist's phrase book. Only belatedly did they offer synonyms or paraphrasings *in the same language*. Gradually, as the populace became more literate, the dictionary broadened its mission; and depending on its content or avowed purpose, it was then variously called a glossary, concordance, vocabulary, gazetteer, lexicon, bibliography, or even encyclopedia.

The first English language dictionary which attempted an exhaustive review of all known English words, regardless of their social status, was Samuel Johnson's 1755 dictionary. Johnson, while accepting the majesty of 18th-century English, did not believe that the natural evolution of a living language could be arrested and he therefore proposed that his great reference work undergo periodic revision. The lexicographer, in his opinion, should be an historian, not a critic. Dictionaries which followed the Johnson work, particularly the great dictionary assembled by Noah Webster, also incorporated elements of street jargon as well as words from foreign tongues newly absorbed into English. The most definitive English language dictionary, however, began as a challenging proposal by Bishop James Trench in 1857 but was not actively begun until 1878. It was a massive scholarly enterprise requiring, at its onset, the collective labors of 1,300 readers and editors amassing over three million quotations from the body of English literature beginning with works from the 12th century. The task, supervised by the Oxford Press, ultimately ran to ten huge volumes, some 16,464 pages, and was not completed until 1928.

The function of the modern medical dictionary is substantially more modest. It furnishes meaning to a limited compendium of technical words expressed through synonyms, diagrams, paraphrasings, charts, metaphor, and quotations. The typical medical dictionary defines only about 35,000 terms. [Webster's Third Edition, in contrast, defines some 450,000 words and requires, for each new edition, an estimated 757 editor-years.]

The medical dictionary thus answers an immediate demand for a precise definition of some word or phrase, but in some cases it will also provide alternative meanings thereby illustrating the inevitable ambiguities and nuances of all vocabularies, scientific or otherwise.

Dictionaries, medical or nonmedical, yield their information by one of the cleverest of manoeuvers: Instead of haphazard or even categorical clustering, the words are ingeniously ordered in an alphabetical array. The time-saving is immense: Were the names randomly entered in a telephone directory, a kind of dictionary with some 800,000 separate entries, it would take weeks or more to locate a sought-after number. With alphabetic organization a successful search rarely requires more than 30 seconds. A physician may therefore seek out the meaning of some technical word in an alphabetized medical dictionary without having to undertake a sabbatical leave.

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A medical dictionary also regularizes technical spelling thus eliminating a prime source of confusion when scientists attempt to communicate in writing with each other. [There are, of course, some medical students who do not recognize the merit of such conformity in spelling, regarding it as a form of pedantic despotism. Some permissive spellers amongst them have even declared that knowing but one way to spell a word is clear evidence of mental impairment.] In recognition of the critical need for an orthography which transcends regional languages, the International Congress of Anatomists periodically meets to revise its *Nomina Anatomica.*

While a medical dictionary hopes to be authoritative, it nonetheless realizes that its obsolescence begins on the day of its publication. It recognizes the inevitability of new words arising, unused words dying, and new meanings being given to obsolete words; and it attempts therefore to strike a balance between a defense of high philologic standards and a linguistic permissiveness. Finally, by providing an etymologic glossary, a good medical dictionary allows the readers to readily understand newly minted technical words since the meanings of the component roots, suffixes, and prefixes are made available.

Most physicians' libraries are also blessed with a general dictionary; and whether it is used to clarify a definition, adjudicate a Scrabble dispute, answer a crossword puzzle question, or merely enlarge one's understanding of English, the book fulfills a useful, perhaps even noble, function. Each excursion into the book becomes a serendipitous adventure; inevitably one's eyes dwell on other words, familiar and unfamiliar, while seeking out the object of the original search.

The faithful dictionaries sit quietly on some accessible shelf awaiting the call: "What does Webster [or its medical counterpart] say?" And after consulting the dictionary, other questions inevitably arise such as "Is the definition a true one?" This is really a pointless question. Rather, it should be worded: " Is this definition consistent with how the word is generally interpreted today? Is the interpreted meaning concordant with the intended meaning? When I use the word, and you read the word, are we thinking about the same thing? Are we, in essence, talking the same language?" The dictionary, imperfect and outdated as it inevitably is, nevertheless acts as our intermediary in the delicate process of effective interpersonal communication. "Dictionaries are like watches:" Samuel Johnson said, "the worst is better than none, and the best cannot be expected to go quite right."

Stanley M. Aronson, M.D.
Editor-in-Chief, Medicine and Health / Rhode Island

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Are Doctors Losing Their Sense of Compassion?

"Sign these papers for your surgery and reimbursement from Medicare as well as your major insurance carrier. Also payment by you is required before surgery is performed."

"But I don't carry that much cash with me nor do I have a check on my person."

"Do you have a credit card?"

"Yes."

"We will take your credit card."

This distressing and unanticipated exchange took place while I was stretched out on the operating table at the office of a dermatologist to whom I had been referred for the removal of a malignant skin lesion on my nose.

Although the consultant was some 75 miles from my home, I readily agreed to the recommendation. The surgery advised was the microscopic excision, Mohs technique, which I also favored for my treatment. I now learned that the pathology report on a keratotic growth on the side of my face showed incomplete removal with evidence of malignant changes. This had been excised by the original dermatologist one week earlier. I realized that such a finding does occur and agreed with the consultant's decision that a wider resection was now indicated.

It was after the injection of a local anesthesia for the surgical excision of this tissue that I was virtually attacked by the secretary (in the presence of the surgeon) requesting signatures on permissions for acceptance of Medicare and my major medical insurance. I protested on this intrusion while about to have surgery, especially when I was at the same time notified that all payments had to be made in advance.

Despite having identified myself as a retired physician my protests were answered by the statement that "the fees are set by Medicare and the major medical insurance will cover the balance of charges."

During the removal of the temporal growth and the examination of the nasal malignancy, I discussed the proposed microscopic excision with the surgeon. After all it was my primary concern and I had read extensively about the steps in the technique. All questions were answered to my satisfaction and the appointment was made for the nasal surgery one month later. After my visit to the consultant I contacted the original dermatologist and expressed my dissatisfaction with the unprofessional approach used in demanding prepayment. Being a senior member of the medical profession I was asking only to be treated in a kindly manner but it was not a plea for discounting the charges. The referring dermatologist merely emphasized that the surgeon was very capable so I decided that further protests were futile and that I should continue with the planned procedure.

On the day of my microscopic surgery there was a delay of over an hour before I was ushered into the operating area. All attempts to inquire about the progress of the operation were greeted with a frigid silence from the surgeon and my inquiries became a monologue. During that time the surgeon and the technician carried on an inane social conversation that served to increase my annoyance since I was a physician patient and therefore very much interested in the progress of the procedure. I have had prostatic surgery and major ear operations, all done under local anesthesia, and was kept advised of the steps being taken during these three to four hour undertakings.

The surgeon did a complete disappearing act after the operation on my nose, and requests for further information were rebuffed with the statement that the doctor was busy with another patient.

A week later there was another delay for over an hour for suture removal which was done by the technician. A dehiscence in the lower half of the incision required six stitches, all without any anesthetic. This repair was done by the surgeon who insisted there was no pain since the tissues were deadened by the previous surgery. My complaints of severe discomfort were totally ignored as the absorbable sutures were inserted.

I refused to return for any further evaluation since I had had enough humiliation and indignity—such as I had never encountered before.

It was five months after payment of the services billed to my credit card that I contacted the physician's county committee and described the incidents which had occurred. The committee accused me of understating the amount that Medicare credited to me by $500. They based that assertion on noting what Medicare had approved, not what had been paid to the dermatologist. They were, in essence, accusing me of cheating.

The committee next went on to declare that I had failed to reveal my status as a retired physician to the surgeon. This was absolutely false, but they backed their assertion by referring to the surgeon's response to my letter.

My notation of the discomfort that I experienced during the resuturing was ignored by the committee.

The annoyance at being subjected to unreasonable delays at the physician's office was answered by the committee that, as a physician, I should certainly know that patients must expect delays in seeing the doctor. I accepted the committee's explanation and noted that the delay was a minor irritation in view of my primary complaints. However, I do believe that any one, senior or otherwise should be accorded the common courtesy of not being unnecessarily required to sit complacently without at least an apology by the attending physician, which never was forthcoming.

After several months of futile correspondence with the county medical committee I contacted the Program Integrity Section of Medicare. I outlined my surgical experience and identified each procedure that had been performed in the operation, pointing out that a third microscopic resection had not been performed although this had been billed to Medicare.

Telephone calls and an exchange of letters finally resulted in a decision that the physician had overcharged me (ie, Medicare) the sum of $1,935.09 submitted by the physician. This resulted in an adjusted refund to me of $1,800 by the physician, and after further correspondence I made the proper payment to Medicare.

During my years of practice and since retirement, it has become necessary to seek the attention of a number of physicians for a variety of ailments, which on some occasions seemed life threatening. These treatments have been guided by doctors in Connecticut, Boston, and Florida. Some of these physicians have been personal friends and others have been recommended because of their professional competence. I have been most fortunate in being accorded the best possible care and never failed to respond by sending a note of gratitude for their personal interest and concern.

It came as a shock to have the bitter experience of a very uncaring physician, and to find such a strong defense of that doctor by the medical committee to whom I turned for support. My intent was to change the spots on that individual, but such efforts I see now as vain. The offending physician will undoubtedly be allowed to roam with impunity and continue to be accepted as a model of professional decorum.

When reviewing the billings rendered by my personal physicians I am appalled by the miserly fees often paid by Medicare. These are doctors who spent considerable time with me, as with all their patients, and yet receive payment almost comparable to unskilled labor. The excessive overcharges by some physicians and medical suppliers undoubtedly diminshes the availability of funds for the average practitioner.

This past year I was the proud recipient of the 50-year membership certificate in the Connecticut State Medical Society. As a lifetime member of the AMA, I was actively associated with the local, state, and national societies of my specialty where I served in many appointed and elected capacities. The early years of practice required many hours of service for care of ward patients at the private hospitals as well staffing the local municipal hospital. This was a responsibility accepted as a norm for our dedication to the profession that we love.

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Perhaps the new social approach of assuring medical care for everyone has changed the perspective of a few physicians as to their true objectives. With my three children involved in medical allied services, including one son actively practicing internal medicine and gastroenterology, I am keenly aware of the difficult problems facing the medical profession.

Many years ago Albert Schweitzer made a profound statement that should be the guidepost for all physicians. "We should become better human beings, more humane humans than we are."

The physician's lack of respect, and dignity accorded to me as an 80-year-old patient and a senior, retired physician was humiliating and disappointing. The response of the county medical society to my detailed account compounded the hurt that I experienced.

Compassion is the one quality that all patients seek when they visit their doctor. Let's hope that the description of my encounter will move at least a few physicians, and county committees, to be more protective of those under their care.

Timothy L. Curran, M.D.
Stuart, Florida

Mismanaged Care

At first, "managed care" might have been seen as an approach that would benefit the delivery of medical care. However, there has been increasing dismay with the actual practice of this system. I would like to give a picture of how this business approach has altered and changed the practice of a psychiatrist who has been serving his patients for the past 44 years. I am well trained, having obtained graduate degrees as a psychologist, a social worker, and a psychiatrist and psychoanalyst. I am not restricted by any formal theories, but have counted on developing an alliance and cooperative relationship with my patients so that together we have been able to work on, and to solve many of the problems that have restricted and troubled their lives.

Then mismanaged care came into the picture, and what did I find, but restriction after restriction, blocks and limitations repeatedly. I saw a patient who was depressed and suicidal following her husband's announcement that he wanted a divorce. This in itself was bad enough except that it followed, by just a few months, the death of a beloved sister, and a year after her mother had died. Surely this woman needed a stable relationship, but the HMO, after a time on the phone permitted eight sessions. I was supposed to produce a miracle. After the eight sessions were completed, and I felt that I needed more time, eight more were allowed! When I miscalculated, and ran over that allotted time, I was told unauthorized sessions would not be paid for, nor could I charge the patient for them. I decided to accept the patient's portion of the bill and forget about the HMO's portion thus lowering my fee considerably.

With another patient I had had a long therapeutic relationship, when she came to inform me that her insurance coverage had gone to another company, and apparently, since I was not on the approved list, she would have to change therapists. I wrote her new company and asked that I be listed as a provider. I was told that they had enough psychiatrists in my area, and therefore I would not be accepted.

I know that I am not indispensible, but why should a well-trained and experienced physician be excluded from any list of providers? Why should a patient be forced to to go to a new therapist and revisit all the work that had already been accomplished?

I was in a drugstore the other day when I overheard the clerk tell a customer that a prescription her doctor had given her would not be paid for because that particular medication was not in the HMO's formulary. I was bold enough to tell the customer that she should protest this. Why should some insurance company decide what medication a physician was to prescribe? Of course, it is a matter of dollars and cents; if that physician had found a medication useful he should be entitled to prescribe it and it should be paid for. I heard about a patient who needed daily eye drops of a medication for his glaucoma, but somehow the bottle he received served him for only 28 days of the month for which is was ordered. The next two or three days he went untreated because the pharmacist could supply the medication only on a once-a-month basis. This patient's vision was at stake, but "rules were rules!"

We have no idea who are these guardians at the gate. What training, what experience do those have who are making the decisions? I have heard that in one of the HMOs, the decisions are being made by ex-FBI personnel who really know how to go by the guide book. Are these the experts we want to decide the appropriate treatment for patients? Physicians have been restrained from discussing these issues with their patients by various "gag rules."

Physicians were slow to realize what was happening to their profession. Humanitarian care was being invaded by business interests. The insurance companies with their powerful lobbyists have been able to set up organizations where huge profits are being made and money has been siphoned away from medical care for these profits. Now the public is beginning to realize that it has fallen into a trap that will slowly tighten and limit health care. Of course, physicians make money by caring for their patients; they are not there only for altruistic reasons. But I believe that for the most part they are "caring," but that is now being threatened and undermined by "mismanaged care."

There are several paths people can take. They should ask their government to legislate for "any willing provider," so that patients can have a choice as to who will treat them. Legislation is also needed to remove the gag rules, so that physicians would not be restricted in what they tell their patients. There must be some control of the records that these companies demand so that confidentiality may be preserved, and somehow there must be limitations on the indecent profits that these companies make from patient's health-care dollars.

Leo H. Berman, M.D.
Westport

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What you need to know about MELANOMA

CUTANEOUS MELANOMA '97: A CLINICAL SYMPOSIUM FOR PRIMARY CARE PRACTITIONERS

Friday, May 16, 1997, 8:30 AM to 5:00 PM
New York City

MEMORIAL SLOAN-KETTERING CANCER CENTER · ESTABLISHED 1884 ·

Jointly sponsored by
The Skin Cancer Foundation and
Memorial Sloan-Kettering Cancer Center.

THE SKIN CANCER FOUNDATION

The incidence rate of melanoma has been rising faster than that of any other cancer in the United States. As the majority of melanoma patients initially present to primary care practitioners, it is crucial for these clinicians to be skilled in early diagnosis and treatment.

This intensive one-day course will inform primary care providers about current approaches to the diagnosis and treatment of melanoma.

WHO SHOULD ATTEND: General clinicians including family practitioners, internists, general surgeons, obstetricians/gynecologists, pediatricians, nurse practitioners, and physician assistants.

FACULTY: 13 nationally recognized authorities on melanoma.

COURSE DIRECTORS:

Allan C. Halpern, M.D.,
University of Pennsylvania School of Medicine
Alan N. Houghton, M.D.,
Memorial Sloan-Kettering Cancer Center
Arthur R. Rhodes, M.D., M. P. H.,
University of Pittsburgh School of Medicine

PRESENTATIONS ON:

Causation and epidemiology
Primary prevention
Risk assessment
Screening
Initial evaluation and management of primary melanoma and advanced disease

PRACTICAL INSTRUCTION IN:

Cutaneous examination and biopsy techniques
Histopathologic and differential diagnosis
Surgical treatment of primary melanoma
Management of regional lymph nodes
Therapies for high-risk and advanced disease

Memorial Sloan-Kettering Cancer Center has approved this course for 6.5 credit hours in Category 1 of the Physician's Recognition Award of the American Medical Association.

Lectures will be followed by panel discussion, question and answer sessions, and one-on-one exchange between panelists and participants. All participants will receive a Course Syllabus.

CUTANEOUS MELANOMA '97 is supported in part through an educational grant from Roche Laboratories and additional funding from Health Insurance Plan of Greater New York (HIP).

COURSE LOCATION: Rockefeller Research Laboratories Conference Center, located at 430 East 67th Street between York and First Avenues.

REGISTRATION FORM

NAME ____________________
SPECIALTY ____________________
ADDRESS ____________________
CITY ____________ STATE ______ ZIP ____________
PHONE ____________________ (PCC)

FEES (Lunch Included):

Physicians: ☐ $165 postmarked by April 1, 1997.
☐ $200 thereafter.
☐ On site registration, $245.

Residents*/Fellows*/Nurse Practitioners/
Physician Assistants: ☐ $100 postmarked by April 1, 1997.
☐ $135 thereafter.
☐ On site registration, $175.

*with a Letter of Introduction from the Program Director.

Enc.$____________

Make payable to: Melanoma '97/MSKCC

Mail to: Memorial Sloan-Kettering Cancer Center, Office of Continuing Medical Education, Box 31, 1275 York Avenue, New York, NY 10021. For further information and a copy of the program, please write to the address above or call: (212) 639 6754; fax (212) 717 3140

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50 Years Ago
From *The Connecticut State Medical Journal*
April 1947

An Alternate Plan

The following letter from President Seymour of Yale University to Governor McConaughy is particularly important at this time. The previous discussions regarding medical education in Connecticut have been followed with great interest by physicians, legislators, and the public. The plan suggested by President Seymour brings realistic thinking to these considerations which will be greatly helpful in the planning of future developments in medical education in our State.

OFFICE OF THE PRESIDENT

February 11, 1947

Honorable James L. McConaughy
Governor of Connecticut
Hartford, Connecticut

Dear Governor McConaughy:

You will recall our conversations with Dr. Darling in regard to medical education in the State of Connecticut. I understand that you have had before you the suggestion of a second medical school as part of the University of Connecticut involving necessarily a considerable financial commitment. May I suggest the following plan as a basis for discussion of a possible alternative.

You will understand, I am sure, the tentative character of the estimates given and the provisional nature of any program which might be considered at this time. Obviously the development at Yale of such a cooperative procedure would call not only for agreement on important matters of University policy but the participation of the medical faculty and University officers in an analysis of instructional needs and clinical facilities before any definite commitment could be made. In spite of this, we feel that some figures might be useful to you for comparative purposes.

Without including special grants for research which fluctuate greatly from year to year and amount to more than $600,000 at the present time, the University appropriations for the medical school for the current year total $1,453,183. From this figure could be subtracted the University overhead allocation to the Medical School of $202,834 and an allotment of $150,000 up to the present made to the Grace-New Haven Hospital on a deficit guarantee basis, which really should be charged against medical relief and not medical education. This leaves a total of $1,100,345 as the over-all cost for education.

On the assumption that ways might be found in the event of a State appropriation to increase the annual class from fifty to seventy-five students a year with twenty-five allocated to Connecticut men and women, the total enrollment would be three hundred. Expenses would increase perhaps by $130,000. This; would mean a cost per student of approximately $4,100 a year. Tuition charges for the Yale Medical School have recently been raised to $750 per year. The tuition for Connecticut students included in this plan might be made $200. This would leave a balance of $3,900 per student to be met by the State. If twenty-five students a year were included in this program it would mean a State appropriation of $97,500 for the first year; $195,000 for the second; $292,500 for the-third; and $390,000 thereafter.

While this total provides what may be a too modest amount for increased expenses, it is felt that the University could undertake to absorb some additional costs, since this new money would in part improve the Medical School's total financial position which now operates at an annual deficit of $713,000 a year.

If at any time you would like to discuss this plan or any modification of it we are at your service.

Faithfully yours,
Charles Seymour

Reprinted from the *Connecticut State Medical Journal*, April 1947.

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THE PRESIDENT'S PAGE

(April 1947)

THE blinding floodlight of critical examination which fell upon medicine during the past few years has not been turned off. If anything, it has become more widely diffused. Some physicians have become conditioned to its smarting rays, and other lights in the sky have at times detracted attention from its searching beams.

Every physician should realize that governmental control of medicine remains a very present and horrid danger. Certain bills introduced in the 80th Congress indicate that medical care continues to be a live subject. Some of these bills in large measure are favorable to medicine *but they portend change*. The President has reiterated his demand for compulsory health insurance. It is widely rumored that soon the Wagner-Murray-Dingell Bill, clothed in new title and fresh habiliments, will strut upon the stage again.

As never before, the people are medicine and hospital conscious. High school students and scholars in social science; labor unions and manufacturers' associations; wealthy foundations and idle gossips, and just common folks, too, recognize the vital importance of health and the need for adequate distribution of medical care; and most have their own pet scheme for implementation.

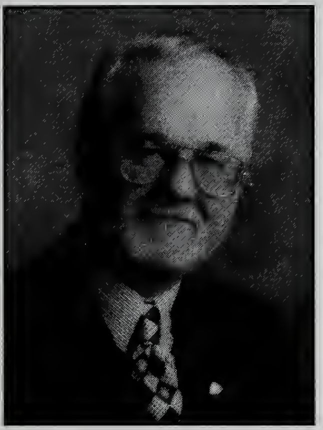
Too many physicians are either oblivious of this or are too complacent about their own affairs to be concerned with the implications of any vast impending social change. Some are lulled by their present security, and some are certain that the shouting and tumult they vaguely hear is but the noisy aftermath of the war, and that soon all will be quiet.

The good old days, if indeed they really were good, are gone forever. Change is a law of life, and the changes to come in the science and practice of medicine should arise from the knowledge of physicians and should be planned and activated by physicians. Progressive improvement in methods for treating the sick, extension of adequate medical care to all of the people, and the advancement of health education offer opportunities for change that should challenge every physician. It should be the aim and desire of the medical profession that changes in these vital fields should grow out of the interest, intelligence, and application of physicians themselves.

Cole B. Gibson, M.D.

THE PRESIDENT'S PAGE

Physician Representation



The Hartford Medical Society celebrated its Sesquicentennial on Monday, 16 September 1996, at the Society's headquarters on Scarborough Street in Hartford. Governor John Rowland gave personal congratulatory remarks and Dr. Henry C. Lee, Connecticut's Chief forensic pathologist, gave an excellent lecture on forensic medicine.

The Hartford Medical Society, founded 1846, is entirely different from the Hartford County Medical Association founded in 1792. Local city organizations such as the Hartford Medical Society were often formed to enable area physicians to meet and discuss the diagnosis and care of prevalent diseases. An epidemic of la grippe or the croup might be prevented if practitioners knew about a sentinel case. Practitioners could then warn patients or at least have the proper medicinals available. Society meetings were a practical way for physicians to learn about the epidemiology of their locale. Since new procedures and information could be shared, these societies functioned in early America as continuing medical education. Whereas county and state gatherings were infrequent because of the difficult travel conditions 150 years ago, local societies could meet more conveniently and often.

The Hartford Medical Society has continued to this day with two important functions, education and history, both sustained by its library and museum.

The Society's library at Scarborough Street is a priceless repository of 19th- and early 20th-century medical and physician history. The history of Connecticut physicians predates the formation of hospitals; doctors were giving care long before hospitals and even medical schools were formed. Hospital libraries no longer keep physician or medical staff memorabilia due to insufficient space; a hospital library is essentially for important up-to-date reference material. Physicians can not expect the hospital to be the custodian of the history of practitioners.

The Hartford Medical Society also has an outstanding museum. There are numerous displays demonstrating how physicians practiced medicine and memorabilia of important milestones in Connecticut physician history.

The Hartford Medical Society has served its community, both patients and physicians, in an exemplary fashion. The Society and its library and museum are priceless. The expense of the building and upkeep unfortunately have become high, making the Society and its board consider selling the building and turning the library and museum collection over to the Univeristy of Connecticut Health Center.

The burden of expense is too great for the Society's members alone. Since all Connecticut physicians profit from the Hartford Medical Society's library and museum, it would not be unreasonable for all Connecticut doctors to support the Society, should its board of directors be inclined to ask for such support. Connecticut physicians should support any decision of the Hartford Medical Society, a society which, for the last 150 years, has demonstrated an outstanding excellence in service to all Connecticut physicians.

Waterbury, New Haven, and Bridgeport also have city medical societies which occasionally still meet. Historically, as hospitals became more important in the provision of medical care, the local city societies, as in Hartford, gave way to the hospital medical staff. Hospital medical staffs organized and met physician needs for local representation and continuing medical education. Hospital medical staffs became separate, independent organizations as legal entities. When hospital physicians have issues which are opposed to the hospital administration, the hospital medical staff can have a meeting with only medical staff members and ask all others, including administrators to leave, so that issues of importance can be discussed in executive session. Medical staff bylaws should allow for this type of executive meeting and for the independence of the medical staff.

About 20 years ago, relations between the William W. Backus Hospital medical staff and the hospital administration deteriorated to the point that physicians needed to meet outside the hospital. The physicians needed a structure to

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organize meetings. To satisfy this need, the Backus Hospital medical staff physicians reactivated their city association, the Norwich Medical Society. Physicians met under the banner of the Norwich Medical Society and quietly voted no confidence in the hospital administrator. This was conveyed to the hospital board of trustees. The administrator was eventually let go.

We have seen local physician representation shift from city societies to medical staff associations and occasionally back. As medical care shifts from inpatient to outpatient to home care, hospitals will perforce no longer be the center of care. It stands to reason that medical staffs will become less important in representing physicians, especially when physicians begin to bear, allocate, and manage risk contracts, and when physicians staff outpatient, freestanding medical care, and surgical centers.

Who will represent this growing group of independent physicians not associated with a medical staff; who will represent the many physician executives and medical directors?

The AMA has already partially answered this question when it changed the name and structure of its largest physician section. The Hospital Medical Staff Section (HMSS) changed its orientation and name to the Organized Medical Staff Section (OMSS). Any group of organized physicians with bylaws, rules, and regulations may seek representation in the OMSS of the AMA. This may be done through the CSMS, which actively participates in the AMA/OMSS.

This answers organized physician representational needs on a national level, but what of the local level? This issue needs further study and should be looked at in any reorganization of the house of medicine. County medical and the state societies currently do an excellent job representing physicians both on and off hospital medical staffs. County medical societies might consider organized medical staff subgroups, such as the AMA has done.

The important issue is that organized medicine changes to meet the needs of physician representation in the new medicine of managed care and risk contracting. The state and county societies need to work together to insure physicians do not fragment but are marching under one banner and going in the same directions.

Michael M. Deren, M.D.
President

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Neil J. Grey, M.D.
Medical Director

Michele R. Norbeck
Director

REFLECTIONS ON MEDICINE

Reliability, Responsibility, and Trust

ROBERT U. MASSEY, M.D.

OVER 20 years ago in a talk to medical school faculty and students, Dr. Larry Weed, the originator of the problem-based record, made a comment that stuck: "The physician who is 99% reliable is totally unreliable." One of those counsels of perfection, unrealistic, but worth aiming for. Weed was pushing for problem-based records, stored in a computer's memory, more reliable by far than the tangle of neurons in our heads, or the illegible squiggles in a patient's record that sometimes cannot even be found.

Reliability, responsibility, and trustworthiness are overlapping virtues that are too frequently overlooked in discussions of medical ethics; I suppose that in the tetrad of autonomy, beneficence, nonmalificence, and justice they are most closely related to beneficence. The computer is mostly reliable without being responsible; it may even be considered trustworthy—Weed was probably right in this regard; a good computer is more reliable and trustworthy than we are; without free will it cannot be otherwise unless it's broken.

Responsibility is a different matter. But to whom are we, especially we physicians, responsible? Insurance worthies and their stockholders? Hospital administrators? Our colleagues? Patients? Their families? Our families? Our neighbors? Or all of the above?

> Which now of these three, thinkest thou, was neighbour unto him that fell among thieves? And he said, He that showed mercy on him. Then said Jesus unto him, Go, and do thou likewise (Luke 10:36-37).

Is this a kind of counsel of perfection, ideal but quite impossible? In a review of Jacques Derrida's *The Gift of Death*, Andrew J. Mckenna writes:

> ... Derrida ponders the implications of responsibility. If we are responsible for others at all, it turns out that we are responsible for all and for everything. Our responsibility toward others, all others and any particular other, is so total as to be utterly impracticable and psychically unbearable.

Does this signify then that the only practical relation between patient and physician is a contractual one in which the moral notions of reliability, responsibility, and trust are set aside because they are impossible anyway? Edmund D. Pellegrino and David C. Thomasma in their book, *The Virtues in Medical Practice* (Oxford University Press, 1993), call this the "ethos and ethics of distrust" and assert that it dominates medical practice in the late 20th century:

> In the last two or three decades, these perennial sources of distrust have been reinforced and expanded [both] within and outside medicine—the commercialization of medical care by advertising and entrepreneurialism; the excessive income and free-spending lifestyle of some physicians; the bottom-line, marketplace, "pay-before-we treat" policies of hospitals and some doctors; the depersonalization of large group prepayment practices; physicians' growing preference for 9 to 5 jobs and time off; the retreat from general to specialty practice; the early retirements. The list is long and growing daily (p.71).

Younger physicians and house officers with whom I've discussed these matters, this decline of medicine into the business ethos of distrust and contract, tell me that it is the antithesis of what they expected when they entered our profession with its traditions of trust, responsibility, and, yes, even mercy. Too often, especially with younger patients of the boomer and Generation X crowd, they sense distrust and hostility toward them as physicians, and wonder how we are to find our way back out of the woods, or more aptly, the desert.

The way out of the total responsibility dilemma is simple: when confronted by a philosopher like Derrida, smile and remember William Osler's comment, "... I have never succeeded in mastering philosophy—'cheerfulness was always breaking in.'" And then more than once he (mis)quoted a line from Carlyle: "our main business is not to see what lies dimly at a distance, but to do what lies clearly at hand."

Our main business lies solely with the patient at hand: she trusts us to be devoted to her needs, to be competent, to be reliable, to maintain confidentiality, to be willing to spend time, and to be caring. She must trust that "her vulnerability will not be exploited for power, profit, prestige, or pleasure" (Pellegrino and Thomasma, p.68).

Recently some of our bioethicists have written of parting company with the older and perhaps outworn ideals of medicine, have talked of change in the rules of the game, have suggested that such things as trust and responsibility are not real, that the Hobbesian contract is the only reasonable way because we are all out to get one another anyway, that self-interest is all that drives our internal machinery. If they win the day, we may indeed be standing staring into the abyss!

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ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

This Month's Reading in Review

TIMOTHY B. NORBECK

A growing number of companies think the recent emphasis on cutting health care costs may be compromising the quality of medical care their employees are getting.... A survey of 252 companies of all sizes, including 46 Fortune 500 corporations, released on 13 March, indicated that one-third were worried that cost cutting was hurting the quality of care—up from 28% last year.

USA Today (14 March 1997)

New Jersey State Health Commissioner Len Fishman, commenting on New Jersey's new managed care regulations which took effect 15 March, and which require that only a *doctor* can make the decision to deny or limit care, gag rules are banned, and an independent review panel established so that patients can appeal decisions by HMOs: "These are the most progressive consumer-oriented regulations in the country. They are comprehensive. And they are reasonable. Managed care can be a positive force in health care. But to succeed, managed care has to have consumer acceptance. Consumers have to be assured that there are protections and accountability."

Asbury Park (N.J.) Press (5 February 1997)

"Managed care is a less than perfect system. Congress as national benefit commission is not an altogether reassuring prospect either. Last year, as part of the same bill in which it said mothers and newborns should be allowed to stay in the hospital more than 24 hours, the Senate considered forbidding private insurance plans from imposing tighter benefit limits on mental illness than physical. The President liked that idea, too, but it would have a cost as well as a benefit, which advocates found it too easy to brush aside. If Congress blocks the worst instincts of the insurance industry, who blocks the worst instincts of Congress?"

Editorial in the *Washington Post*
(28 February 1997)

"Lawmakers should be mindful of managed care's potential for innovation and cost control, but they should also move forward with reasonable protections for the millions who must live by managed care's rules."

A lead editorial in the *New York Times,*
supporting managed care reform.
(9 February 1997)

Surprising recent doomsayers, the longer life spans of today's Americans aren't intensifying decline and disability among the elderly.... A study by Duke University researchers discovered a steady shrinkage in the percentage of people aged 65 and over who were classified as disabled.... The Duke team found that while 24.9% of the elderly in 1982 were unable to perform activities such as cooking, bathing, or dressing themselves, the percentage in 1994 had declined to 21.3%.

The Wall Street Journal (18 March 1997)

"I can't understand my rotten luck," complained Max Dadashvili, 26, who was sitting comfortably at a Tel Aviv café when a suicidal 72-year-old man jumped off a building and landed on him. Dadashvili's back was broken; the jumper walked away uninjured.

Newsweek (24 February 1997)

In a speech to shareholders, RJR Tobacco Co. Chairman Charles Harper recently addressed the issue of secondhand smoke: "If children don't like to be in a smoky room, they'll leave." As for infants, said Harper: "At some point, they begin to crawl."

The Washington Monthly (March 1997)

America may be losing the battle against smoking altogether.... Last year's study by a Minneapolis research firm, found that the proportion of smokers nationwide had risen two-fifths of a percentage point, which means more than a million Americans took up the habit.... In the previous study, by comparison, the rate of adult smoking had fallen to its lowest level since 1990, when the annual survey was begun....In Connecticut, 19.8% of the population smokes.

Medical Economics (24 February 1997)

Only in America: Chris Morris filed a $1 million lawsuit against the state of Michigan in November, claiming that he caught a cold in the rotunda of the state Capitol while viewing an art exhibit there earlier in the year.

News of the Weird (17 February 1997)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

From the Executive Director's Office

COUNCIL MEETING

Thursday, 16 January 1997

Attendance

Present, in addition to the Chairman, Dr. Joseph Czarsty, were Drs. Ahamed, Beck, Bigos, Bobruff, Brooks, C. Czarsty, Deren, Eslami, Fischbein, Franklin, Freedman, Geary, Herzog, Hollister, Kamens, Katz, Keating, Lesnik, Montegut, Mushlin, Sadowski, Scarpa, Timmerman, and Zeppieri.

Also present were: Mr. Norbeck, Ms. Lindquist, Mr. Brunell, Ms. Morelli, Ms. Schaffman (all CSMS staff), Mr. Thompson (FCMA staff), Ms. Debiase, Ms. Comarco (HCMA staff), Ms. Harney (NHCMA staff), Ms. Snider (NLCMA staff), and Dr. Genel.

Absent were: Drs. Handleman, Koplin, McDonnell, Narayanan, Redmond, Schwartz, Sosa, Tesoro, Watson, Wesler, Wetstone, and Wolfson.

Reports of Related Organizations

Connecticut Peer Review Organization (CPRO): Dr. Edward Kamens reported that the study CPRO did on acute myocardial infarction that involved various hospitals has just been published by the *Joint Commission Journal* and that he would be willing to ask CPRO to send the articles to CSMS for anyone who would like to read them.

He also stated that Connecticut has a program on pneumonia that looks at the process of care in Connecticut. Interesting data appeared in that study and 25,000 national patients were matched. That material is now being sent to every peer reviewer in the United States.

It was reported that Gary Cohen, M.D., at CPRO will be working with Bob Brunell on a new outreach effort to physicians for information on studies that are going on.

CPRO will initiate a Medicaid Managed Care Quality review program. The CPT study dealing with acute myocardial infarction indicated that Connecticut showed the chief significant improvement on the use of aspirin during hospital stays, increased use of aspirin at time of discharge, and increased use of beta blockers and heparin. The bottom line is a significant decrease in mortality. Connecticut had an excellent mortality rate before and is probably the best in the nation at this point. This report is going to be released by HCFA shortly and when it is published, Dr. Kamens will supply CSMS with copies of the report. The report was received as information.

MD Health Plan (MDHP): Dr. Freedman reported that a comparative study was done between MDHP physicians and and the other divisions of Qual-Med and that our colleagues from Connecticut have less complications than the rest of Qual-Med. He stated that MDHP is pleased with its providers and should say so.

Report of the Executive Director

Mr. Norbeck reported on the following items of interest:

The two patient protection initiatives in California went down in defeat, by 58% to 42% and 61% to 39% respectively. They will be back—proponents spent only $150,000 on advertising, compared to the five to seven million dollar media attack waged by the insurers. The insurers did what they do best, confuse enough people to make them vote "No."

Ross Perot's Reform Party is now an officially recognized political party in Connecticut. Perot and Pat Choate got over 10% of the vote, above the national average and enough to qualify for party status. Nationally, the reform party qualified for more than 30 million dollars in funding for the election in the year 2000.

Liability reform supporters are optimistic about the new Congress. Estimates are that medicine has three new allies in the U.S. Senate for a total of 47. The House did pass substantial tort reform last year, but it was killed in the Senate. There is wider support in the new Congress now for a cap on noneconomic damages and other reforms, but still short in the Senate.

HCFA has approved two new programs to give Medicare HMO enrollees more flexibility under Medicare. Beginning in January, United Health Care Corporation will extend coverage for seniors when they travel outside their home health plan service area. Before this action, seniors were limited to emergency care or had to get a 90-day rider. The Blues have launched "Medicare Blue USA" which will allow HMO enrollees to register as guest members with another Blue Plan for up to six months. Fifteen plans are now participating in this program, including California, Florida, and South Carolina.

The Republicans and Democrats are working on a new package of benefits, for the first time since 1989, for Medicare patients. The legislation would cover annual mammography screening for women, pap smears and pelvic exams every three years, annual comprehensive prostate cancer screening for men, annual colorectal

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screenings, and diabetes management and training programs. The only preventive care covered by Medicare now is flu shots and biannual mammograms. The new benefits would not be subject to Medicare's annual $100 deductible for physicians' charges. Republicans will not propose a plan to means test seniors unless the president reverses himself and includes it in his 1998 budget. The report was received as information.

Physician Assisted Suicide and Referral for Care

A communication was received from the AMA outlining a plan to establish a central number that patients could call to obtain information about a local medical society or other source for locating a physician who will be able to meet patients' end-of-life care needs or provide consultation and treatment for those contemplating suicide as an alternative to seeking care. To achieve this goal they are asking state medical associations to assist in identifying physicians in the various states or regions who can respond to these requests on referral from AMA. It was VOTED to cooperate with the AMA program with the caveat that CSMS is concerned about the quality of care at the end of life.

It was further VOTED to refer to the Committee on Legislation the concerns of the Hospice organizations around the state regarding legislation relating to decentralizing control and to report back to the Council.

Resolution Referred from the House of Delegates

The following resolution on "Consumer Protection: Quality in Medical Policy and Medical Review" was referred to the Council for action with the suggestion for support for incorporation in the Patient Protection Bill.

Resolved, that the Connecticut State Medical Society recommend the establishment of an independent health-care appeals committee within the Department of Consumer Protection composed of Connecticut physicians nominated by the Connecticut State Medical Society, and be it further

Resolved, that this resolution be forwarded to the Governor of the State of Connecticut and other appropriate bodies who are responsible for the quality of medical practice, and this resolution be forwarded to the AMA for consideration.

It was VOTED to refer the resolution to the Committee on Legislation and have them report back on what action can be taken.

Communication from New London County Medical Association

A request was received from the New London County Medical Association to undertake a statewide advertising campaign to educate people on matters which affect on the selection of HMO/insurance carriers, the reason being that there has been misleading advertising on the part of various HMOs.

It was VOTED that a letter be prepared by the CSMS Public Affairs Director and sent to all county associations pointing out all that has been done in enlightening the public on health insurance and to include a copy of the brochure "Which Health Insurance is Right for You." It was reported that 50 thousand copies of this brochure have already been distributed and additional copies are available on request.

It was VOTED that in the CSMS upcoming campaign about "Managed Care" and the "Patient Protection Act," which includes advertising, editorials, and speaking to legislators, the concerns of New London County on misleading advertising be addressed and our position on "Managed Care" be also included. However, prior to any statements being made, it was requested that New London County submit copies of the material they referred to in their letter to CSMS for review.

It was VOTED that CSMS strengthen the physician survey study on HMOs which is currently being done to be sure it included questions on their experience with HMOs, ie, medical care denial, hospital denial, difficulty in receiving payment, and other problems they encountered with HMOs.

Ad Hoc Committee on Data Release

The Council VOTED that a permanent committee be appointed to supervise this activity and to refer the names of the Ad Hoc Committee to the Nominating Committee for consideration.

Report of AMA Delegation on December 1996 Meeting

A comprehensive report on the meeting was distributed to all members of the Council with their agenda. It was reported that at the opening session there were 426 delegates seated representing every state and territory and most national specialty societies.

Dr. Kamens commented on some of the highlights of the meeting as follows:

> He reported that the House adopted a recommendation that provides for four-year terms with a maximum tenure of eight years for the Board of Trustees and the AMA Councils.
>
> The AMA House considered resolutions on the implementation of AMA's new program for setting standards for practicing physicians, called American Medical Accreditation Programs (AMAP). This program was developed in response to previous House actions calling on the AMA to support development of standardized criteria to be used in managed care contracts

for reviewing physicians' office, and medical records in order to avoid duplicate review. It is expected that as AMAP implementation proceeds, county, state, and specialty medical societies will become involved in this program.

The AMA supported the position that there should be mandatory HIV testing of all pregnant women and newborns with counseling and recommendations for appropriate treatment.

Termination of late-term pregnancies was discussed and the following resolution adopted:

> That the AMA Councils and medical specialty societies, undertake a study of which late-term pregnancies termination techniques and circumstances conform to the standards of good medical practice as required by current policy, and that the AMA work with pertinent medical specialty organizations to develop appropriate clinical practice guidelines for late-term pregnancy termination.

The Council on Medical Education provided a comprehensive study of the options for financing graduate medical education. This report was in response to a growing perception that the U.S. is training, through graduate medical education (GME), a number of physicians that is beyond national requirements and that the excess is not to the national benefit. This is coupled with the need to reduce the number of GME positions funded by Medicare and to restructure Medicare to a sounder fiscal basis. Other items covered were the physician workforce development and health insurance reform. There were other issues discussed by the House of Delegates, most of which were reported in the AMA News. Dr. Freedman, who served on a reference committee, also commented on the meeting.

Emergency Medical Services for Children Committee

It was VOTED to appoint Dr. James F. Wiley of Hartford to serve on the Department of Public Health, Office of Emergency Medical Services for Children Committee.

Committee on Legislation

In the absence of David Parke, M.D., Chairman of the Committee, the report on legislative activities was presented by Mag Morelli, Director of Government Relations. She provided the Council with an update on the political outlook regarding managed care reform legislation that CSMS is supporting. CSMS is working with several coalitions of providers and consumers on this issue. The Council VOTED to approve CSMS continuing to work with the Coalition of Providers that CSMS with whom they have worked during the last few years.

The Council was informed of the Advanced Practice Registered Nurses' plans to introduce a bill to remove physician supervision from their licensure statute. The Council expressed the opinion that CSMS lobbyists should oppose any changes.

Copies of bills of concern to CSMS and the minutes of the Committee on Legislation were all distributed to members of the Council. The Council VOTED to approve the following recommendations made by the Committee:

> That CSMS testify in favor of an Any Qualified Provider bill if it was raised for public hearing.
>
> That CSMS support legislation that would require "active direct supervision by a physician at the specific venue in which the physician assistant is working."
>
> That CSMS oppose any proposal to make it easier for sheriffs to serve physicians.
>
> The Council VOTED not to approve a recommendation of the committee that CSMS support Physician Profiling bills, such as was passed in Massachusetts, and are now being introduced in Connecticut. Copies of the Massachusetts bill with sample physician profiles attached were distributed to the Council. The Council did not want any action taken on this issue for one year until more information was available on the Massachusetts program and advised CSMS lobbyists to oppose any bills introduced at this session and offer CSMS participation in a task force to study the concept.
>
> The Council also VOTED that CSMS support mandatory HIV testing of pregnant women. (Staff reported that the Sections on Obstetrics and Gynecology, Family Practice, and Pediatrics oppose mandated testing and support mandated counseling.)
>
> CSMS staff was requested to reproduce the billboards on managed care as posters that can be mailed to all CSMS members.

CPRO Board

It was VOTED to confirm the appointment by the President of Drs. Roger Beck and Juan Sosa to succeed themselves on the CPRO Board.

Committee on Public Health

It was VOTED to appoint Constance Walker, M.D. as Chair of the Committee on Public Health replacing Dr. G.O.F. Jensen who has resigned from the committee.

Dates of Future Meetings

Annual Meeting:
House of Delegates,Wednesday, 14 May 1997

Semi-Annual Meeting—House of Delegates:
Wednesday, 12 November 1997

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IN MEMORIAM

BIONDI, BENEDICT, Tufts University School of Medicine, 1938. Dr. Biondi practiced medicine in New Haven since 1942 and was associated with the The Hospital of St. Raphael. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Biondi died 1 February 1997 at the age of 84.

BOGDAN, PETER E., New York University School of Medicine, 1958. Dr. Bogdan joined Greenwich Hospital as an attending urologist in 1966 starting his private practice in Greenwich at the same time. In 1991 he retired from private practice, after which he was appointed vice president of medical services at Greenwich Hospital, retiring from that position in 1996. President of the Greenwich Medical Society in 1985, Dr. Bogdan was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Bogdan died 28 December 1996 at the age of 63.

CURTIS, SIDNEY H., University of Iowa College of Medicine, 1958. Dr. Curtis was the Medical Director of Pratt and Whitney Aircraft from 1976 to 1980 and then the Medical Director of United Technologies Corporation from 1980 to 1988. After his retirement from United Technologies Corporation, Dr. Curtis helped establish occupational medicine clinics at Bristol Hospital—Medworks, and Baystate Medical Center—Business and Health. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society where he served on the Committee on Public Health from 1989 to 1993, and the American Medical Association. Dr. Curtis died 7 March 1997 at the age of 64.

DeGROOT, THEODORE, National University of Ireland, Faculty of Medicine University College, Dublin, 1966. Dr. DeGroot, a family practitioner and radiologist, maintained a private practice in Norwich for almost 25 years and was associated with the William Backus Hospital. He was a member of the New London County Medical Association and the Connecticut State Medical Society. Dr. DeGroot died 11 January 1997 at the age of 68.

HYLAND, FRANCIS J., National University of Ireland, Faculty of Medicine, Galway, 1954. Dr. Hyland practiced obstetrics and gynecology at Milford Hospital from 1960 to 1984. In addition to numerous local, state, and national obstetrical societies, he was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Hyland died 3 March 1997 at the age of 68.

MELTZER, SAUL B., State University of New York College of Medicine, Brooklyn, 1944. Dr. Meltzer, a general surgeon in Fairfield county, retired from practice in 1985. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Meltzer died 19 December 1996 at the age of 77.

MOULYN, ADRIAN C., Faculteit der Geneeskunde Rijksuniversiteit te Utrecht, Utrecht, Netherlands, 1930. Dr. Moulyn practiced psychiatry in Stamford for 38 years and was affiliated with both Stamford Hospital and Greenwich Hospital. In addition to his private practice, he was a member of the Stamford Hall, a private sanitarium, and the Silver Hill Hospital in New Canaan. Dr. Moulyn was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Moulyn died 3 February 1997 at the age of 91.

PERAKOS, GEORGE P., Georgetown University School of Medicine, 1932. Dr. Perakos practiced internal medicine and gastroenterology in New Britain from 1937 to 1978. He was a Director of the University of Connecticut School of Medicine Gastroenterology Fellowship Training Program and served New Britain General Hospital as Chief of Medicine from 1964 to 1967, Chief of the Sub-Section of Gastroenterology, and Director of the Yale Affiliated Gastroenterology Program. Active in the New Britain Medical Society, Dr. Perakos was a member of the Hartford County Medical Association where he served as an alternate delegate to the Connecticut State Medical Society, the Connecticut State Medical Society where he served on an Advisory Committee to the State Department of Health for 10 years and was a founder and past president of the Gastrointestinal Section of the Connecticut State Medical Society, and the American Medical Association. Dr. Perakos died 20 January 1997 at the age of 89.

SHERMAN, BENJAMIN, George Washington University School of Medicine, 1929. Dr. Sherman practiced medicine in Bridgeport and Middletown. He was a member of the Middlesex County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Sherman died 1 December 1996 at the age of 92.

SKRECZKO, CHARLES, Jefferson Medical College of Thomas Jefferson University, 1937. Dr. Skreczko retired from the practice of orthopaedic surgery in 1986. He had been affiliated with Yale New Haven, The Hospital of St. Raphael, Milford Hospital, and The Griffin Hospital. Past president of the New Haven Medical Association, Dr. Skreczko was a member of the New Haven County Medical Association where he served as a delegate to the Connecticut State Medical Society from 1975 to 1984, the Connecticut State Medical Society where he served on the Emergency Medical Services Committee for 1970 to 1974, and the American Medical Association. Dr. Skreczko died 16 January 1997 at the age of 86.

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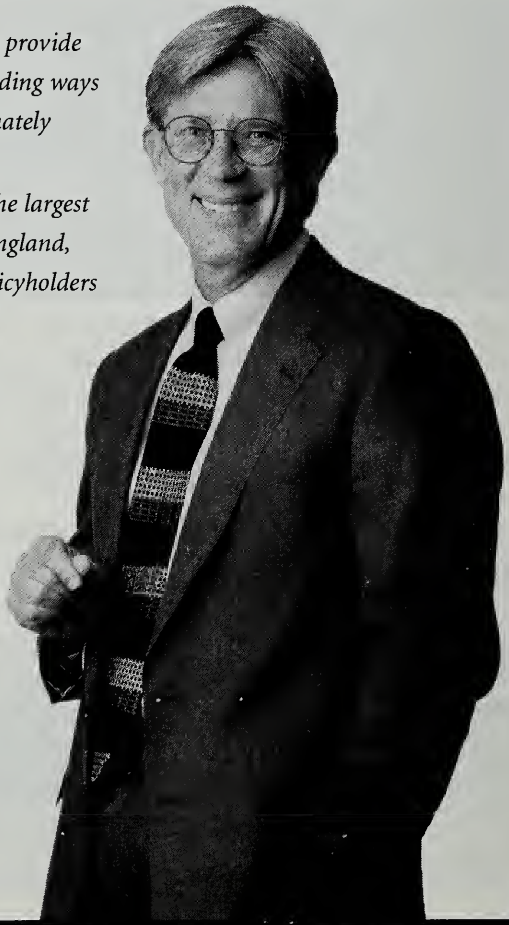

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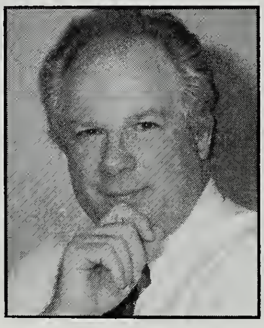

The Abuse of Cardiovascular Procedures

DAVID WATERS, M.D. AND FRANCIS KIERNAN, M.D.

IN 1979 a Sounding Board article[1] in the *New England Journal of Medicine* entitled "The abuse of coronary arteriography" began with the following paragraph:

> It has been well observed that by solving one problem one usually creates the next. Coronary arteriography is a current example of the solution-turned-problem, since the procedure by its character slips through the net of controls designed by the medical profession to protect the public. Coronary arteriography, of course, is a superb diagnostic technique that, when done under appropriate circumstances by competent physicians, can yield enormously useful information with minimal and quite acceptable morbidity and mortality. However, when one considers that no tissue is removed for review, that the indications for the procedure are not well defined and are often largely subjective, and that the recommendation for the study is usually made by the physician who will profit from its performance, it would be naive to deny the possibility of abuse.

Coincidentally, 1979 marked the first published report of coronary angioplasty. The popularity of this technique has steadily grown: in 1995 almost 900,000 coronary angioplasty procedures were performed worldwide, nearly half of them in the United States.[2] Increasing coronary angioplasty volume has been associated with a proliferation of cardiac catheterization laboratories, and since angioplasty requires surgical back-up, the proliferation of cardiac surgery programs has been stimulated as well. The problem described in 1979 has not been resolved, but instead has become larger, more serious, more complicated, and, of course, more expensive. The problem affects not only coronary arteriography, but extends now to coronary angioplasty and, to a lesser extent, coronary bypass surgery. In this article we will summarize four interrelated aspects of the problem: overutilization, the low volume/poor outcome relationship, inefficient delivery, and the increasing complexity of coronary interventions.

Overutilization

The indications for cardiac procedures are clearly defined in some instances, but "gray zones" or controversial areas cover large numbers of patients. Coronary arteriography after myocardial infarction is one such area. The proportion of patients undergoing coronary arteriography after myocardial infarction vary from 52% to 81% in different geographic regions of the country,[3] and in Canada the rate was reported to be 35% compared to 68% in the United States.[4] In spite of higher rates of coronary angiography, angioplasty, and bypass surgery in American myocardial infarction patients, the Canadian patients did not have higher mortality or reinfarction rates during follow-up.[4]

Similarly, within the United States, coronary arteriography was performed more often after myocardial infarction in Medicare patients in Texas than in New York (45% *vs* 30%, $P<0.001$), but over a two-year follow-up period the adjusted mortality rate was lower in New York (hazard ratio 0.87, 95% confidence intervals 0.78 to 0.98). Patients from Texas were 41% more likely to report angina

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DAVID WATERS, M.D., Director of Cardiology, Divisions of Cardiology, Hartford Hospital and the University of Connecticut Health Center, Hartford and Farmington; FRANCIS KIERNAN, M.D., Director of the Cardiac Catheterization Laboratories, Divisions of Cardiology, Hartford Hospital and the University of Connecticut Health Center, Hartford and Farmington.

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(P=0.002) and 62% more likely to be moderately limited in performing physical activities (P<0.001) than their New York counterparts. Thus, patients from Texas not only had more procedures but suffered worse outcomes.[5]

Overutilization of coronary angioplasty also appears to be a major problem. Topol et al examined insurance-claims data from 2,101 patients who underwent coronary angioplasty in 1988-89. Even though practice guidelines stipulate that myocardial ischemia should be present for coronary angioplasty to be indicated, only 29% of patients underwent exercise testing, indicating that this guideline was being largely ignored, and angioplasty was being done based only on anatomic indications.[6]

The cardiologist who evaluates a patient and decides whether coronary arteriography or coronary angioplasty is indicated often either performs these procedures directly or has them done by a partner. Where capitation has replaced fee-for-service, changing the financial incentive for procedures to a disincentive, utilization has decreased substantially. One way to reduce overutilization is to restrict reimbursement to cases that meet strict guidelines; however, a major limitation of this approach is that indications for these procedures depend to a large extent on the interpretation of symptoms. A better system would be one where the cardiologist who orders the procedure would neither benefit from, nor lose financially from the decision.

The Low Volume/Poor Outcome Relationship

Over the past two decades studies have documented that mortality after coronary bypass surgery is higher in smaller compared to larger volume centers.[7-9] This relationship has recently been shown to be true for coronary angioplasty as well.[10-12] Among nearly 25,000 angioplasties done in California in 1989, both the need for bypass surgery during the same admission and the combined endpoints of either death or bypass surgery were significantly higher in low-volume centers.[10] Similarly, among 217,836 Medicare patients who underwent coronary angioplasty in the United States between 1987 and 1990, the in-hospital mortality increased significantly, from 2.5% in highest volume centers to 3.9% in the lowest volume centers.[11] In the database of the Society for Cardiac Angiography and Interventions for 1992–93, including nearly 20,000 patients with first balloon angioplasties, in-hospital mortality (P=0.04), emergency bypass surgery (P<0.001), myocardial infarction (P<0.001), and any major complication (P<0.001) were all inversely related to the volume of angioplasty procedures.[12] After adjustment for case mix, laboratories performing more than 400 cases per year had significantly fewer complications (odds ratio 0.66, 95% confidence interval 0.46 to 0.96).

A task force of the American Heart Association and the American College of Cardiology have concluded that an annual volume of at least 200 coronary angioplasty cases per institution and at least 75 per cardiologist as the primary operator are essential for the maintenance of quality and safe care.[13] In an editorial accompanying one of the studies cited in the preceding paragraph, Ryan noted that the majority of the estimated 7,000 angioplasty operators in the United States today perform fewer than 50 procedures per year.[14] He concluded that not every institution eager to offer angioplasty nor every cardiologist desiring to perform it should be allowed to do so, and that the proper solution to this problem is sensible regionalization of facilities and appropriate credentialing of qualified individuals.

Discriminating among individual operator outcomes for coronary angioplasty is limited by the low incidence of major adverse events, subjectivity or susceptibility to manipulation of more frequently occurring adverse events, the modest predictive capacity of statistical models, and the low volumes of individual operators.[15]

The increased mortality in low-volume centers that has been clearly documented for coronary bypass surgery, coronary angioplasty, and for many noncardiac procedures also, has not been demonstrated as convincingly for coronary arteriography. The obvious reason for this is that mortality rates are extremely low for this procedure. Nevertheless, it is widely acknowledged in the cardiology community that low-volume centers tend to have higher complication rates and a higher proportion of angiograms that have to be repeated due to technical inadequacies.

When confronted with data on the relationship between volume and outcome, the defenders of a low-volume center usually respond by claiming that their own results are acceptable, or even excellent. However, because their volume is too low to produce statistically valid comparisons for serious endpoints that are infrequent, such as death, this argument is unconvincing. Aggregate data on low-volume centers has repeatedly shown worse outcomes compared to other centers for both cardiac and noncardiac procedures.

Current trends are exacerbating the increased risk of low-volume centers. Patients now being referred for coronary revascularization are older and have more comorbidity than patients undergoing these procedures even as recently as a decade ago. Stroke, renal failure, sternal infections, depression, and other postoperative complications increase mortality, length of stay, and hospital costs, and decrease return-to-work rates and quality of life. Excellent postoperative care with immediate, around-the-clock access to highly competent consultants can prevent these complications or reduce their adverse consequences. Low-volume hospitals are less likely to be able to provide this level of service.

Inefficient Delivery of Cardiac Care

A problem akin to overutilization and to the low volume/poor outcome relationship is the inefficient, fragmented delivery of cardiac care that results from the transfer of cardiac patients from one hospital to another. Some patients are admitted to a small community hospital for cardiac monitoring, are transferred to an intermediate hospital for coronary arteriography, and then on to a tertiary center for angioplasty or bypass surgery. This approach escalates overall costs and lengths of stay, and makes continuity of care very difficult. The unavoidable delays associated with transfers also increase the risks of complications: patients with unstable angina who do not respond quickly to medical therapy are at high risk for myocardial infarction until they undergo coronary revascularization.

Patients with unstable coronary syndromes should be hospitalized at a center with angioplasty and coronary surgical facilities. Some of them will benefit from urgent revascularization immediately after their angiogram, either because their condition is precarious to begin with or because they have deteriorated during angiography. Coronary angioplasty can often be done as a combined procedure with the initial diagnostic arteriogram, reducing patient discomfort, complications, cost, and length of stay.[16] The most recent American Heart Association/American College of Cardiology guidelines endorse combined angiography and angioplasty, noting that a combined procedure is especially indicated for patients with unstable angina, suspected restenosis, or acute myocardial infarction.[13] A combined procedure may be done in other clinical circumstances too, if the stenoses are clearly identified at angiography with high quality image systems, and if the patient is well informed and prepared beforehand.

The Increasing Complexity of Coronary Interventions

Until recently, ordinary balloon angioplasty was the only tool that the interventional cardiologist had to master. The first coronary stent was approved in 1993, and two trials have since shown that these devices reduce the incidence of restenosis.[17,18] The proportion of coronary patients who receive stents has increased dramatically, and most cardiologists who perform angioplasty also now implant stents. Less than optimal stent placement predisposes the patient to stent thrombosis.[19] Optimal stent placement may require the use of intracoronary ultrasound in some cases,[19] and is more likely to be achieved by experienced operators. Studies comparing outcomes at different levels of operator experience have not yet been reported for coronary stents.

Coronary atherectomy uses another device that appears to improve angioplasty outcomes in skilled hands. Two clinical trials comparing coronary atherectomy to ordinary angioplasty reported no difference in restenosis rates, with an increased risk of acute complications with atherectomy.[20,21] The more recent Balloon Versus Optimal Atherectomy Trial (BOAT) included only operators with excellent results; their goal was to obtain the widest possible arterial lumen with either technique. The restenosis rate in BOAT was significantly lower with coronary atherectomy, with no difference in acute complications.[22]

An overview of the clinical trials comparing primary angioplasty to thrombolytic therapy for the treatment of acute myocardial infarction indicate a reduction in the combined endpoint of death or reinfarction by nearly half with angioplasty.[23] The authors noted, however, that these trials were conducted in a few highly specialized centers, and that the outcomes of angioplasty may be less impressive when performed in community hospitals by low-volume operators. A subsequent report showed no outcome advantage for primary angioplasty over thrombolytic therapy in current clinical practice.[24]

Primary angioplasty to treat myocardial infarction requires a high level of technical expertise and experience. Intracoronary drug delivery and stent placement are often needed to attain optimal results. Primary angioplasty must be performed as an emergency procedure to obtain maximal benefit; therefore, laboratories must remain open at all times if all eligible patients are to benefit from the procedure. Logistically, this is not feasible in smaller programs.

Conclusions and Recommendations

1. The cardiologist should not be financially rewarded (or penalized) for referring a patient for a cardiovascular procedure.
2. Coronary angioplasty should be limited to centers that perform a minimum of 400 cases per year, with each interventional cardiologist performing a minimum of 75 cases per year, as recommended in the American Heart Association/American College of Cardiology guidelines.
3. Interventional cardiologists should be experienced in coronary stent placement and primary angioplasty.
4. Coronary angioplasty should be done as a combined procedure with the coronary angiogram in a majority of cases.
5. Coronary angiography should only be done in centers that perform coronary angioplasty, because up to one third of angiography patients could benefit from having angioplasty as part of the procedure.

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6. Coronary angioplasty should only be performed in centers that do coronary bypass surgery. A surgical volume of at least 200, and preferably 400 cases per year is necessary for a viable cardiac surgery program.

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Case Report: Bronchial Atresia Associated with Pectus Excavatum

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CONGENITAL bronchial atresia is a rare anomaly representing one cause of congenital regional emphysema. This entity is characterized by an atretic proximal portion of a segmental bronchus with subsequent mucocele development. Hyperinflation of lung segments distal to the obliterated bronchus occurs via collateral air flow.[1]

We present a case of bronchial atresia associated with pectus excavatum. To our knowledge this has been the third reported case in the medical literature. A review of the literature of bronchial atresia with an emphasis on clinical, radiological, and pathological features will be discussed.

Case Report

A 12-year-old female who had undergone surgical repair of pectus excavatum in 1992 was being followed by her pediatrician because of frequent bronchitis and pneumonia since early childhood. She also had a history of asthma for which she required two hospitalizations in two years preceding her presentation. The patient also reported shortness of breath on exertion and a chronic cough for many years. When seen she was afebrile and on physical examination had decreased breath sounds over the left upper lobe. A chest radiograph (Fig. 1A) showed hyperlucency and decreased markings in the left upper lobe as well as two well-defined tubular perihilar densities that appeared to extend from the hilum but did not branch. A computed tomographic (CT) scan of the chest (Fig. 1B) confirmed these findings revealing complete left upper lobe emphysema. Pulmonary function testing was consistent with a mildly restrictive, partially reversible obstructive pulmonary pattern.

The patient underwent a left upper lobectomy. Bronchial atresia of the apico-posterior, and anterior segments of the left upper lobe was confirmed. The bronchial tree draining these segments was plugged by mucus and was traced proximally to the hilar region where it ended as a blind pouch. There was no connection to the amputated margin of resection near the proximal bronchial tree. Histopathology of the emphysematous portions showed marked dilatation of alveolar air spaces (Fig. 2A). The alveoli from adjacent normal-appearing lung were histologically unremarkable (Fig. 2B). The patient was discharged on the sixth hospital day without complications.

Discussion

Congenital bronchial atresia was first described in 1953 by Ramsay.[2] However, it was not until 1963 that Simon and Reid established the criteria for the diagnosis of this rare anomaly in their detailed description of three cases.[3] This anomaly is characterized by atresia of a segmental bronchus at its proximal end which dilates and becomes mucus-filled, forming a bronchocele (Fig. 3). There is no communication with the rest of the bronchial tree. Regional hyperaeration is possible via collateral air movement.[4] The collateral ventilation seen in congenital bronchial atresia is efficient in aeration of regional segments of lung that do not directly communicate with the main bronchial airways. The conduits for this air flow are felt to be inter-alveolar pores of Kohn, broncho-alveolar channels of Lambert, and inter-bronchiolar channels. In the

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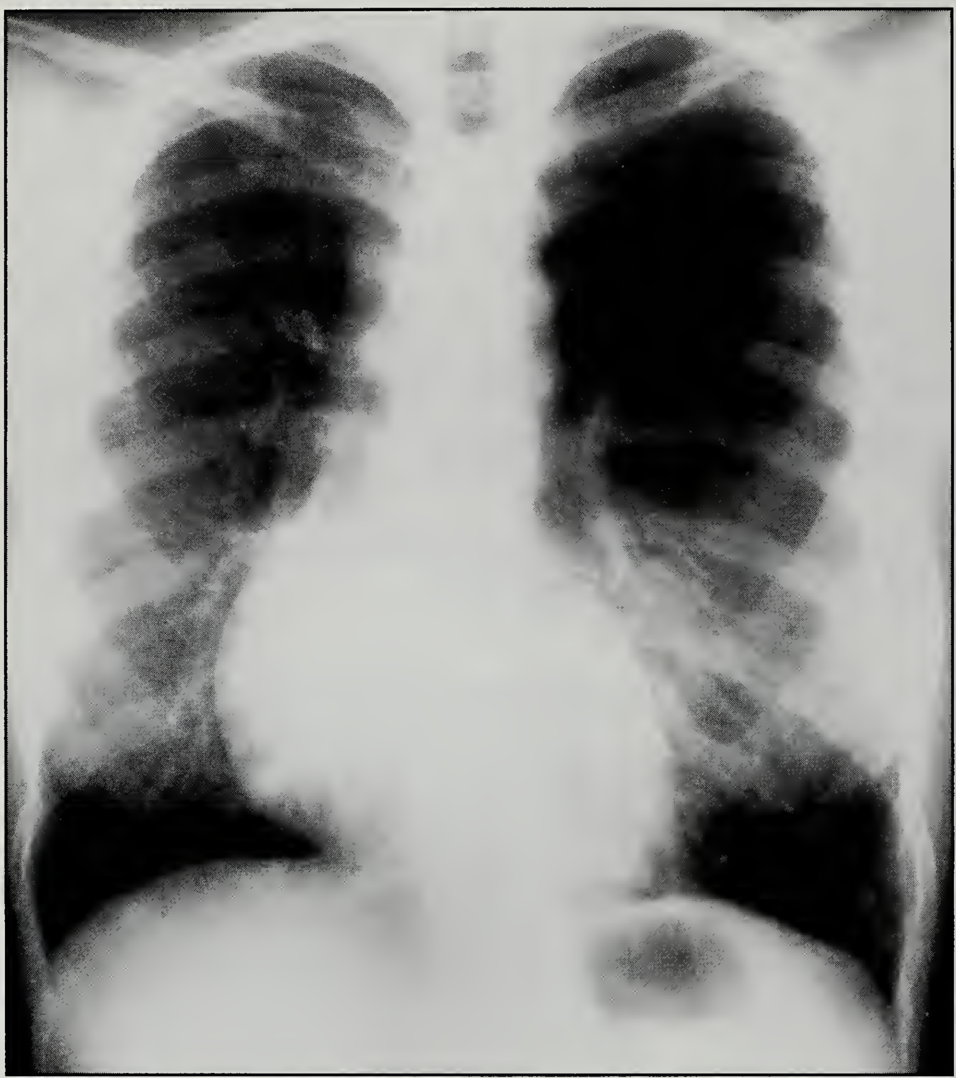

Figure 1A.—Postero-anterior chest radiograph. Hyperlucency and decreased lung markings are noted in the left upper lobe. There are two well-defined nodular left perihilar densities that appear to extend from the hilum, but do not branch.

neonate, hyperinflation may occur shortly after birth. The fact that inter-alveolar pores and broncho-alveolar channels have not been routinely identified in infants suggests that the interbronchiolar channels are the major bypass for airflow.[1] Because a check-valve mechanism exists in this collateral circulation, air is trapped in the affected segments of lung which become emphysematous.[4] The emphysema is related to both alveolar overdistension as well as hypoplasia of alveoli in an abnormally smaller-sized segment of lung.[5]

Pathology

Grossly, the involved segment of lung tissue is markedly emphysematous, noncompressible, and shows a relative absence of anthracotic pigment due to its isolation from adjacent normally aerated lung.[1] Subpleural blebs are occasionally seen.[6] While there is no direct luminal contiguity of the bronchocele to the proximal bronchus, rudimentary connections may exist such as fibrous bands or thin bronchial vestiges.[7]

The emphysematous segment of lung shows a relative and absolute decrease in number of alveoli per unit lung volume,[1] and the alveoli are dilated with intact walls.[6] The alveolar hypoplasia is thought to result from diminished ventilation and perfusion. Normal alveolar development in the postnatal period relies significantly on work-load hypertrophy, which is decreased in the underventilated affected segment.[1]

The bronchocele is lined by normal respiratory mucosa consisting of ciliated epithelium with numerous functioning goblet cells. Although ciliary motion is physiologic, the secreted mucus is unable to be transported out of the obliterated bronchus, thus dilating the pouch and forming impactions of mucus and desquamated tissue.[7] The atretic bronchus accumulates mucoid material to varying degrees from as early as six days to the second decade of life.[1]

Bronchial atresia most commonly affects the apicoposterior segment of the left upper lobe as in our case. Less frequently, the segmental bronchi of the upper and middle lobes of the right lung are involved. Lower lobe involvement is rare.[5] Interestingly, predominance of the left lung is also seen in other congenital pulmonary abnormalities such as sequestration, agenesis, and hypoplasia.[8] Bronchial atresia associated with both intra and extrapulmonary sequestration and cystic adenomatoid malformation was reported in a five-month-old infant.[9]

Embryology

Normal bronchial buds appear during the fourth gestational week with segmental bronchi being present by five weeks. Normal bronchial development is complete by the 15th week of gestation.[7] McAlister reported an intrauterine ultrasonographic diagnosis of congenital bronchial atresia at 15 weeks gestational age.[10]

The etiology of bronchial atresia is uncertain. Investigators have suggested a similarity between bronchial and intestinal atresia. Louw and Barnard experimentally in-

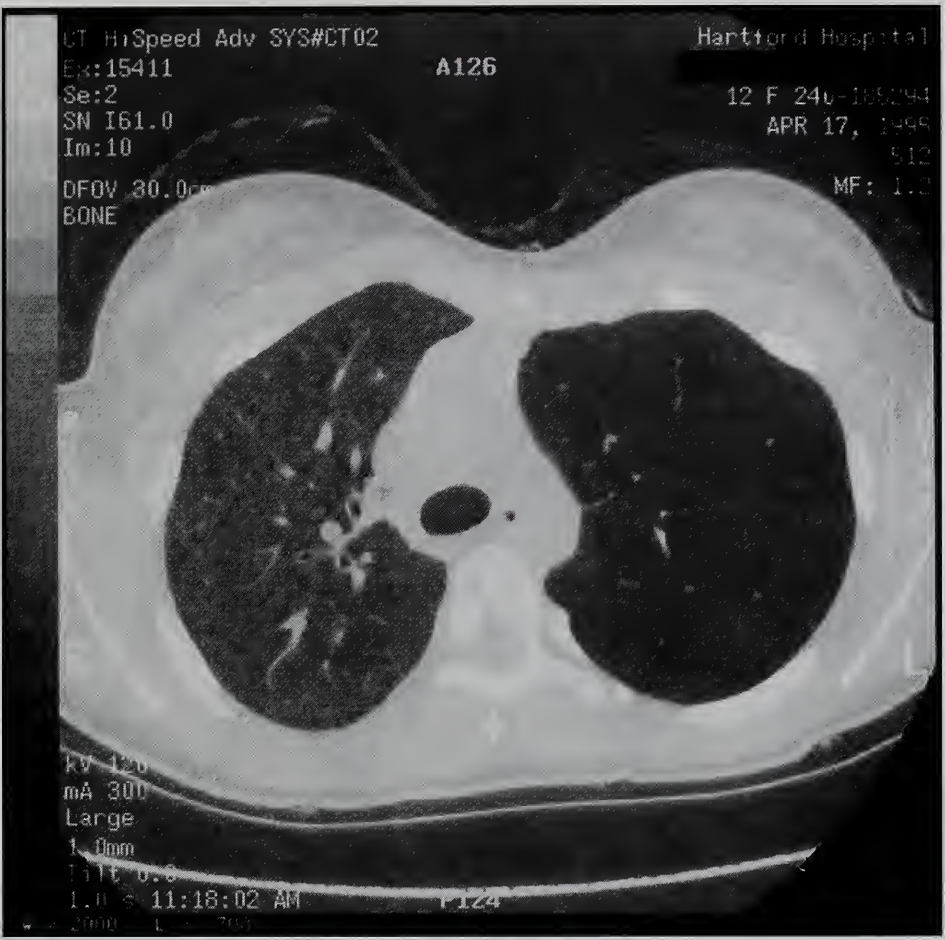

Figure 1B.—CT scan of the chest: There is complete left upper lobe hyperlucency. The perihilar nodular densities seen on the chest radiograph were not readily identifiable on this study. Note pectus excavatum deformity.

duced intestinal atresia by artificially interrupting the blood supply of mesenteric arterial branches. This suggested that an *in utero* vascular accident may be the initiating factor in bronchial atresia as well.[1]

These embryological considerations prompted several investigators to produced experimentally vascular insults after the 15th gestational week which left an atretic bronchus with a normal distal bronchial structure and hypoplastic alveoli. In separate studies, atresia with discontinuity of the bronchi and normal distal development was obtained by placing the vascular insult after the fifth week of gestation.[7] However, other evidence further supports the theory of a late *in utero* insult. The left upper lobe is a known area of germinal imbalance which occurs late in embryogenesis. The normally formed distal bronchial tree may also imply that the bronchus became atretic after completion of bronchial development.[1] From these investigations it has been suggested that an *in utero* vascular accident may occur anywhere from the initial growth of the bronchial bud at five weeks to complete bronchial ramification at 15 weeks of gestation.

Diagnosis

Most patients are young adult males, but patients may present from infancy to later adulthood.[8] In many instances, congenital bronchial atresia is diagnosed incidentally after an abnormal chest radiograph prompts futher investigation. It may also present as respiratory distress in the neonatal period.[1] Common presenting symptoms include cough, dyspnea, and recurrent pulmonary infections.[8] Decreased breath sounds over the affected area are the most frequently reported physical sign.[1]

The chest roentgenogram typically shows a hilar or perihilar nodular mass with regional hyperluceny and decreased lung markings.[5] The hilar density represents the collection of mucus within the obliterated bronchus in its course toward the central bronchial tree. Air-fluid levels of varying sizes have been reported, which can represent the presence of superimposed infection within the bronchocele.[1]

These radiographic findings pose a diagnostic dilemma, especially in a young and asymptomatic patient. Bronchial atresia is one cause of congenital lobar emphysema.[11] Besides bronchial atresia, other processes to consider which may produce a radiographic appearance of hilar mass with distal hyperlucency include bronchial obstruction by primary or secondary neoplasm, chronic granulamatous tissue, foreign body, mucoid impaction, or broncholithiasis.[5] Another entity that may cause a similar radiographic appearance to bronchial atresia is Swyer-James syndrome which is considered a postviral form of bronchiolitis obliterans. This rare disease is characterized by a unilateral hyperlucent small lung with air trapping, and may be lobar. In contrast, the typical branching hilar density seen in bronchial atresia is not characteristic of Swyer-James syndrome.[12] Bronchogenic cysts and pulmonary sequestrations should also be considered in the differential diagnosis.[5] Felson states that besides bronchial atresia, only bronchogenic cysts and intralobar sequestrations display hyperaeration distal to a mucoid impaction.[13] However, lobar sequestration does not pro-

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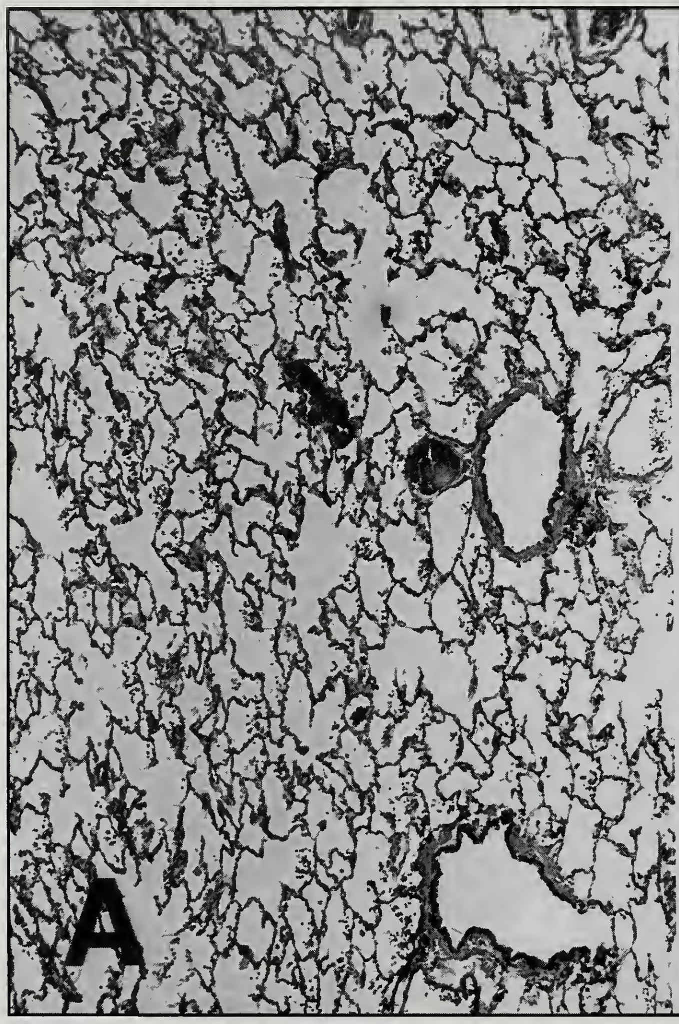

Figure 2A.—Sections of tissue from lower portions of lung showed histologically unremarkable alveoli.

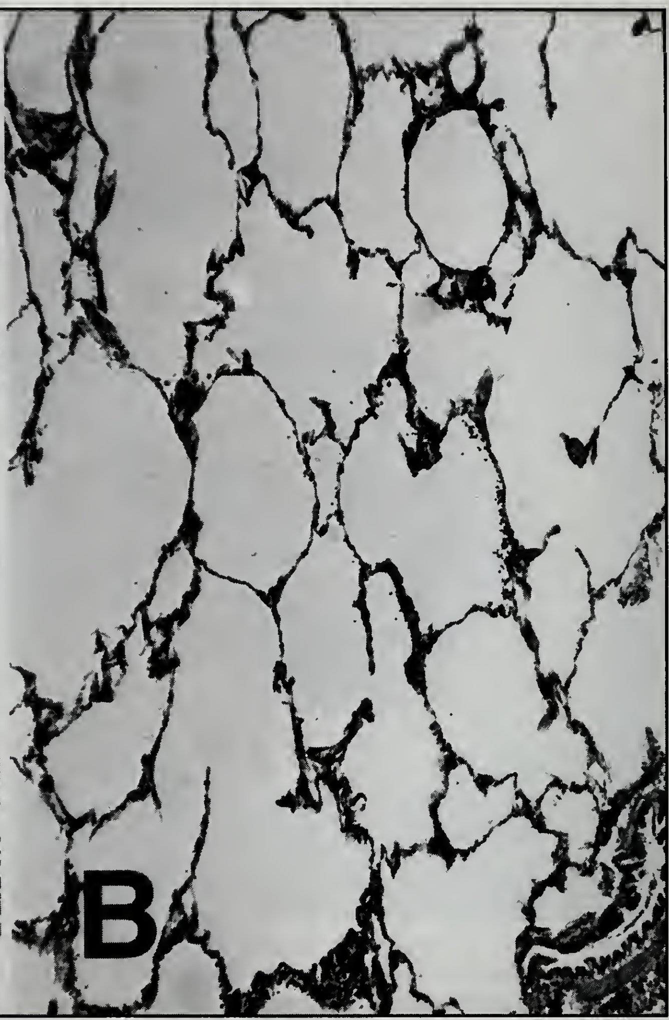

Figure 2B.—Hematoxylin-eosin stain of tissue sections taken from emphysematous areas of lung shows marked dilatation of alveolar air spaces. Bronchi from these areas were plugged with mucus.

duce localized pulmonary densities oriented from the hila, and most commonly involves the inferior and posterior portions of the lungs. Bronchogenic cysts may mimic the radiographic appearance of bronchial atresia as well. However, air trapping occurs within the cyst rather than in distal pulmonary segments, and mucoid impaction is uncommonly seen.[1]

The imaging modality of choice is computerized tomography. Axial CT can clearly delineate the branching nature of the mass representing the mucocele and its lack of communication with the main bronchial tree. Also, areas of segmental hyperaeration are more readily identified than with conventional radiography.[8] Utilization of MRI has been reported.[14] Although the branching appearance of the bronchocele is well visualized, the distal hyperexpansion can not be detected with MR imaging. Dynamic contrast-enhanced CT can be used to distinguish bronchocele from a vascular structure. For these reasons, CT before and after administration of contrast media is the preferred method for evaluation of suspected bronchial atresia.[8]

In our review of the literature we found only two previously reported cases of congenital bronchial atresia associated with pectus excavatum.[4] Pectus excavatum poses no significant functional disadvantage, but may become a problem cosmetically.[15] During inspiration against an obstructing lesion, negative intrathoracic pressure is increased and may contribute to the formation of pectus excavatum. The mechanism of development of a pectus excavatum deformity is widely accepted as being the result of costal cartilage overgrowth. In bronchial atresia it is felt that costosternal retractions are used to overcome the airway obstruction caused by normal lung tissue being compressed by adjacent hyperexpanded segments. These retractions may further accentuate the natural course of pectus excavatum. Support for this theory exists in the fact that the side of the pectus excavatum with the deeper impression is the corresponding side of the bronchial atresia. The association of congenital bronchial atresia with pectus excavatum is most likely nonspecific since this chest wall deformity is also seen with other airway abnormalities. In addition, uncertainty exists as to whether or not pectus excavatum may be attributed specifically to an underlying pulmonary abnormality.[4]

The management of congenital bronchial atresia is controversial. In asymptomatic adults this entity is usually managed conservatively. Symptomatic patients with recurrent pulmonary infections, pneumothoraces, dyspnea, chest pain, or compromise of normal lung tissue by adjacent emphysematous lung benefit from surgical excision to prevent these complications in the future. Asymptomatic children are usually surgically managed to allow for normal growth and development of surrounding lung tissue. When bronchial atresia is associated with pectus excavatum, surgery to correct both abnormalities is usually performed concomitantly. The preferred age to repair pectus excavatum is between five and 10 years of age.[4]

In summary, bronchial atresia is a rare congenital anomaly which typically presents as a hilar or perihilar branching mass with regional hyperlucency and decreased lung markings on chest radiographs. The majority of patients are asymptomatic, and awareness of this entity allows for the possible diagnosis of bronchial atresia on the basis of conventional radiography alone.

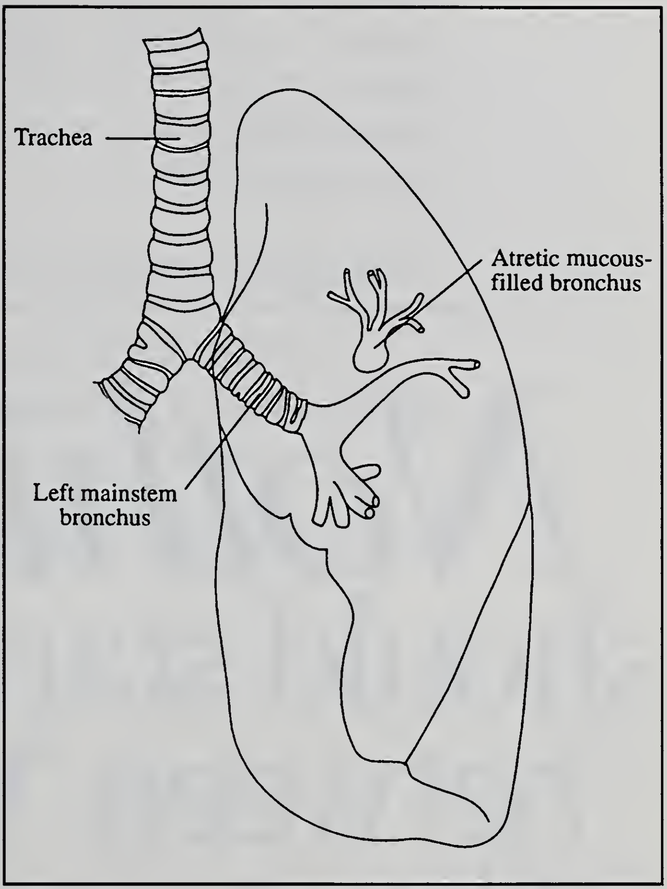

Figure 3.—Schematic illustration of left upper lobe bronchial atresia.

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New Generations of Quinolones: With Particular Attention to Levofloxacin

PAUL G. AMBROSE, PHARM.D., ROBERT C. OWENS, JR., PHARM.D., RICHARD QUINTILIANI, M.D., AND CHARLES H. NIGHTINGALE, PH.D.

Pharmacodynamic Concepts

SINCE the advent of antimicrobial chemotherapy, considerable controversy has existed as to the most appropriate method to administer antibiotics to maximize the killing of microorganisms, and yet to minimize toxicity to the patient. Over the past decade, scientific information has emerged from animal models of infection and toxicity, *in vitro* pharmacodynamic studies, and human clinical trials that enable us to establish the best mode of drug administration to achieve these goals.

Aminoglycosides (eg, tobramycin, gentamicin), fluoroquinolones (eg, ciprofloxacin, levofloxacin) and amphotericin B eliminate microorganisms most rapidly when their concentrations are appreciably above the minimal inhibitory concentration (MIC) of the targeted microorganism(s); hence, their type of killing is referred to as concentration-dependent or dose-dependent killing. It has been shown that aminoglycosides eradicate organisms best when they achieve levels that are approximately 10-12 times above the microorganism's MIC.[1,2] In animal models of infection (including neutropenic animals), many more animals survive a potentially lethal challenge of bacteria if given the aminoglycosides as a single daily dose as compared with the same amount of drug divided on an every-8-hour basis.

Although fluoroquinolones also exhibit concentration-dependent killing,[3-5] unfortunately, excessively high concentrations of these agents in serum can be associated with seizures and other potentially serious central nervous system adverse reactions. An integration of the area under the concentration-time curve (AUC) with the (MIC) has been used to produce the pharmacodynamic relationship of AUC/MIC to predict clinical outcomes with the fluoroquinolones. Preliminary observations from animal models of sepsis, in-vitro pharmacodynamic experiments, and clinical outcome studies indicate that the magnitude of the AUC/MIC ratio can be utilized to predict clinical response. Although it remains quite controversial, AUC/MIC ratio $\geq$ 125 have been associated with the best cure rates in the treatment of infections caused by gram-negative enteric pathogens.[6] Yet for gram-positive bacteria, it appears that the AUC/MIC ratio can be appreciably lower. Of the available fluoroquinolones, levofloxacin and sparfloxacin have the highest AUC/MIC ratio against *S. pneumoniae* and *S. pyogenes.* As a result, these new quinolones become the preferable choices in the treatment of infections from these organisms. Unfortunately, the high incidence of phototoxicity with sparfloxacin may limit its use.

Quinolones Classified by Generation

The division of antibiotic classes into *generations* based upon microbiological activity has always been controversial among academic infectious disease physicians, but has been useful and practical for the practicing physician.

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For instance, clinicians usually know that when a cephalosporin is needed for gram-positive coverage, a *first-generation* agent should be selected, whereas the higher generations of cephalosporins are more appropriate for situations in which gram-negative bacteria become the usual responsible pathogens. Moreover, since most infections in the intensive care unit (ICU) are treated on an empirical basis, integrating an antibiotic's microbiological activity and pharmacokinetic properties (eg, pharmacodynamics) against the suspected pathogens of a clinical condition usually results in a wise antimicrobial choice.

As with the cephalosporins, it now seems reasonable to make a similar generation classification for the quinolones, especially since the number of available agents in this class has increased dramatically. Like the cephalosporins, the quinolones can be placed in different generations based upon coverage for important pathogens. Our classification, shown in table 1, is based upon the aforementioned pharmacodynamic concepts of quinolone agents against *S. pneumoniae* and *B. fragilis*, and we believe the division will assist the clinician in selecting the proper quinolone.[7]

Nalidixic acid was the first oral quinolone that gained significant usage. Because of its reliable activity against most enterobactereaceae, it became a popular choice for the treatment of difficult urinary tract infections. In fact, it was often referred to as an oral form of kanamycin. Unfortunately, its serum and tissue concentrations were low, that it could not be employed for infections in oth body sites. Several other similar quinolones (eg, oxolini acid, cinoxacin) were developed that were essentiall identical with nalidixic acid but could be given less frequently. None of these first-generation quinolones has any activity against *Pseudomonas aeruginosa*, anaerobes or gram-positive bacteria.

The next or *second-generation* were those that not only expanded the bacterial coverage to *P. aeruginosa*, and staphylococci, but some of them had parenteral formulations that allowed for the treatment of these organisms in both the urinary tract and other body sites. This change was the result of the discovery that the placement of a fluorine into the 6-position of the 4-quinolone molecule markedly enhanced the microbiological activity. As a result of this observation, all the newer agents in this class are referred to as *fluoroquinolones*. These new quinolones have microbiological activity closely similar to that of the aminoglycosides, namely gentamicin, tobramycin and amikacin. Moreover, the quinolones as a class exhibit high intracellular penetration, allowing for the therapy of the so-called atypical organisms, like *Chlamydia* spp., *Mycoplasma* spp., and *Legionella* spp., which are susceptible to these agents. These second-generation quinolones can be divided into two subgroups, of which one contains those quinolones (eg, ciprofloxacin, ofloxacin) that can be used

Table 1. Quinolone Antibiotics Classified by Generation

Quinolone(s)	Generation	Organism	Site of Infection	*S. pneumoniae* AUC/MIC	*B. fragilis* AUC/MIC
Nalidixic Acid Oxolinic Acid Cinoxacin Enoxacin	First Generation	Enterobacteriaceae	Urine	N/A N/A N/A N/A	N/A N/A N/A N/A
Norfloxacin Lomefloxacin	Second Generation	Enterobacteriaceae plus *P. aeruginosa*	Urine	N/A N/A	N/A N/A
Ciprofloxacin Ofloxacin	Second Generation	Enterobacteriaceae plus *P. aeruginosa,* Atypicals*	Systemic	11.6 41.2	1.45 6.3
Levofloxacin Sparfloxacin	Third Generation	Enterobacteriaceae *P. aeruginosa,* Atypicals* plus Streptococci	Systemic	47.5 67.2	13.8 16.8
Trovafloxacin†	Fourth Generation	Enterobacteriaceae *P. aeruginosa,* Atypicals* Streptococci plus Anaerobes	Systemic	99.2	49.6

N/A: Not applicable; *Chlamydia spp., Mycoplasma spp., Legionella spp.; †Investigational agent

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to treat infections in all body sites, and are available in both intravenous and oral formulations, while the other group has agents (eg, lomefloxacin, norfloxacin) only for urinary tract infections and available only orally.

Unfortunately, none of these second-generation quinolones exhibited adequate activity against streptococci and/or had sufficient clinical outcome data to rely upon them to treat serious infections from these organisms. Although for a short while there was a fluoroquinolone, temafloxacin, with appreciable streptococcal activity, it had to be withdrawn from the market because of serious adverse reactions. This represented a significant problem for the clinician, since the leading cause of community-acquired pulmonary and sinus infections is *Streptococcus pneumoniae,* and the major cause of pharyngitis, soft tissue, and skin infections is *Streptococcus pyogenes*. This opened the door for the creation of quinolones that further expanded the coverage for these bacteria, leading to the development of the *third-generation* quinolones: levofloxacin and sparfloxacin. As mentioned below, these new agents allow for single agent therapy in community-acquired lung infection, since they provide coverage for the leading bacterial and atypical causes of this infection. However, it is recognized that ofloxacin may be classified as a third-generation quinolone based upon pharmacodynamic considerations, we classified it as second-generation because clinical outcome data in serious respiratory tract infections are generally lacking in the literature and historically ofloxacin is considered akin to ciprofloxacin.

Interestingly, there will soon be on the market a *fourth-generation* quinolone, trovafloxacin, which exhibits appreciable anaerobic and streptococcal activity. One may speculate that the third-generation quinolones will become popular choices in lung and sinus infections, while the fourth-generation quinolones will emerge as the best choices in intra-abdominal infections.

Role of Levofloxacin in Community-acquired Pneumonia and Transitional Therapy

When an otherwise normal patient is admitted to the hospital with a serious community-acquired pneumonia (CAP), the usual treatable pathogens include bacteria, like *S. pneumoniae, M. catarrhalis, H. influenzae*, and atypical or intracellular pathogens like *Chlamydia pneumoniae*, *Mycoplasma pneumoniae,* and *Legionella spp.* Traditional choices to eradicate *H. influenzae, M. catarrhalis* and *S. pneumoniae* include a second generation cephalosporin (eg, cefuroxime), a third-generation cephalosporin (eg, ceftizoxime, cefotaxime, ceftriaxone) or a β-lactamase inhibitor (eg, ampicillin/sulbactam). Since these β-lactam antibiotics do not penetrate inside cells to any significant degree, they will not provide coverage against the atypical pathogens. If the clinician cannot determine whether the patient has a "typical" bacterial infection or an "atypical" pneumonia, it makes sense to use a combination of erythromycin with the β-lactam agents, since this macrolide attains high intracellular concentrations and exhibits reliable microbiological activity against the atypical organisms. The third-generation quinolone, levofloxacin, is a particularly attractive choice owing to its activity against both the typical and atypical pathogens associated with community-acquired pneumonia, and, therefore, represents a monotherapeutic alternative to combination therapy.

Once the patient has become clinically stable and able to take oral medications, consideration should be given to replacing the parenteral drugs with monotherapy: azithromycin, clarithromycin, or a third-generation quinolone (eg, levofloxacin, sparfloxacin). Levofloxacin is a sensible choice for transitional therapy since it is available in both an intravenous and oral formulation and has essentially 100% bioavailability.

Conversion from intravenous to oral antibiotics results in important clinical and economic gains. Significant cost reductions occur because of lower drug acquisition costs, a reduction in pharmacy time in the preparation and mixing of drugs, the ability to deliver a drug without the intervention of intravenous technicians, and a reduction in the length of hospital stay. Perhaps the most important benefit derived from oral antibiotic therapy is the removal of intravenous catheters, which are the major source of nosocomial bacteremia, especially those caused by staphylococci.[8] It has been estimated that there are more than 20 million vascular catheters inserted annually in patients admitted to hospitals in the United States, resulting in more than 50,000 episodes of bacteremia or line sepsis .[9] The frequency of these infections is directly correlated with the duration of their insertion.[10] In a recent cost analysis of 104 patients with line sepsis, it was noted that the average additional cost from each episode of line sepsis was $3,707, and even higher ($6,064) if it was caused by *S. aureus*.[11] Moreover, because of the absence of cumbersome intravenous delivery systems, patients are more easily mobilized on oral therapy, again reducing the possibility of other hospital-related problems such as deep vein thrombophlebitis, pulmonary emboli, depression, and adverse drug reactions. Assuming there is no malabsorption problems, we try to replace intravenous drugs with oral agents after two to three days as long as the patient is clinically stable and shows a decreasing temperature and white blood cell count. If one waits for the white blood cell count or the temperature to become normal, the patient is usually cured and, hence, no longer requires any antibiotic therapy.

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In conclusion, since many antibiotic regimens could be considered appropriate for the treatment of community-acquired pneumonia, the challenge is to find the most cost effective regimen. The combination approach leads to considerable hidden costs, such as those involved in more frequent administration (nursing and pharmacy time) and more frequent use of delivery systems (increased cost of needles, mini-bags, sets, etc). In addition, other possible disadvantages of combination antibiotic therapy include; the potential for greater disruption of normal flora and increased frequency of superinfection, and greater likelihood of adverse drug reactions. Unlike the β-lactams, levofloxacin has good activity against both the typical and atypical pathogens associated with CAP and, therefore, represents an optimal single agent treatment alternative to dual therapy.

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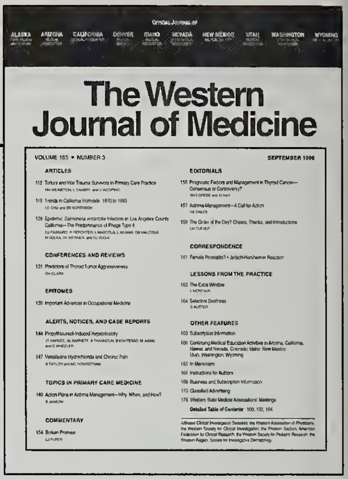

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EPITOMES OF PROGRESS

Important Advances in Clinical Medicine

Ophthalmology

Fox Boswell, M.D., Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in ophthalmology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Ophthalmology of the California Medical Association, and the summaries were prepared under the direction of Fox Boswell, M.D., and the panel.

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New Therapies for Cytomegalovirus Retinitis in Patients with the Acquired Immunodeficiency Syndrome

RECENT estimates suggest that the human immunodeficiency virus (HIV) has infected nearly one million people in the United States and more than 20 million worldwide. In as many as 70% of patients infected with the virus, one or more ocular complications will eventually develop, most often an opportunistic infection or unusual neoplasm. Cytomegalovirus (CMV) retinitis is the most common ocular infection in patients infected by HIV, affecting up to 40% of patients at some point during the course of their illness. Cytomegalovirus retinitis occurs almost exclusively in patients with CD4$^+$ T-lymphocyte counts below 100×10^6 per liter (100 cells per mm^3) and often affects both eyes.

Until recently, intravenous ganciclovir and foscarnet were the only agents approved by the Food and Drug Administration (FDA) for the treatment of active CMV retinitis. Although these therapies are effective at delaying the progression of disease, reactivation is the rule. In addition, the daily intravenous administration of ganciclovir and foscarnet is expensive, inconvenient, and frequently associated with adverse systemic side effects, most typically neutropenia and nephrotoxicity. Moreover, as patient survival and length of therapy have increased, viral resistance to these drugs has become more common.

The Studies of Ocular Complications of AIDS [acquired immunodeficiency syndrome] (SOCA) Research Group recently reported on the combined use of intravenous ganciclovir and foscarnet. Although combination therapy showed increased effectiveness at delaying the progression of retinitis, more than doubling the time to reactivation, treatment required daily, separate intravenous infusions. Most patients found this regimen difficult, with a substantially adverse effect on their overall quality of life. For this reason, combination therapy is usually reserved for those patients with severe systemic disease that is resistant to monotherapy alone.

Cidofovir, a new nucleotide analogue, recently gained approval from the FDA for the treatment of active CMV retinitis and appears to be as effective as either ganciclovir or foscarnet at preventing disease progression. In addition, cidofovir has two notable advantages: First, its exceedingly long intracellular half-life allows for weekly induction and every-two-weeks maintenance infusions, a treatment schedule that eliminates the need for an indwelling catheter. Second, cidofovir is effective against most viral strains that are resistant to ganciclovir and foscarnet and, as such, promises to play an increasingly

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important role in the treatment of long-standing disease. Cidofovir is, however, extremely nephrotoxic, prohibiting its use in patients with preexisting renal disease. Moreover, the intravenous administration of cidofovir is time-consuming and must be accompanied by aggressive hydration therapy and the use of probenecid to minimize renal toxicity. Cidofovir should, therefore, always be administered in a carefully controlled manner and patients monitored closely for side effects, including renal failure, neutropenia, neuropathy, alopecia, nausea, rash, and intraocular hypotony and uveitis. Cidofovir should not be used in patients prone to dehydration.

Oral ganciclovir has been approved by the FDA for use as maintenance therapy for inactive CMV retinitis. Whereas oral ganciclovir is effective at delaying the progression of inactive retinitis, the time to reactivation may be somewhat shorter, and the occurrence of new lesions in the uninvolved eye slightly more common with the use of oral *vs* intravenous drug. For patients with CMV retinitis not immediately threatening the optic nerve or macula, however, or for whom daily intravenous therapy is difficult or impossible, oral ganciclovir may offer a reasonable alternative. Oral ganciclovir is poorly absorbed by the gastrointestinal tract, and its use should be avoided in patients with diarrhea or poor gastrointestinal absorption.

Ophthalmologists routinely use the direct intraocular administration of ganciclovir, foscarnet, and most recently, cidofovir, for the treatment of CMV retinitis. Both in-office administration and surgical implantation of long-acting, slow-release reservoirs are used, with the intraocular implants having only recently received FDA approval. These techniques are extremely effective, and their use seems most indicated for patients with active retinitis close to the optic disc or macula or for whom parenteral therapy is contraindicated. Intraocular delivery, however, whether by direct administration or implant, carries the added risks of intraocular infection, hemorrhage, and retinal detachment. Moreover, local therapy does not protect the other eye or treat concurrent CMV disease in distant organs. Many ophthalmologists will, therefore, supplement local therapy with oral ganciclovir as tolerated.

There is currently no single best drug for the treatment of CMV retinitis in all patients. The selection of an appropriate antiviral agent needs to be tailored to each patient and based on a careful consideration of the location and extent of ocular and systemic disease, an understanding of previous and possible drug-related side effects, and a knowledge of the viral response to past treatments. Although CMV retinitis remains a major cause of ocular morbidity in patients infected by HIV, new and investigational therapies provide hope for effective long-term treatments in the near future.

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Photorefractive Keratectomy

In late 1995, the U.S. Food and Drug Administration (FDA) for the first time approved a device to be used for the surgical correction of refractive error. This device, the excimer laser, is used to alter the corneal curvature by removing tissue from the corneal surface with minimal damage to the underlying cornea. A new geometry is thereby conferred to the surface of the cornea to reduce or eliminate one of the following forms of refractive error: myopia (nearsightedness), hyperopia (farsightedness), or astigmatism (in which the cornea has nonuniform curvature).

The 193-nm excimer laser has a special form of photon-tissue interaction that makes it uniquely applicable to this type of surgical treatment. Tissue is removed through a process known as photoablative decomposition, in which molecular bonds are disrupted and a gaseous cloud of material is ejected from the corneal surface with each pulse. There is minimal damage (thermal or otherwise) to the underlying corneal tissue, so that in most cases the cornea retains a high degree of clarity as it heals from the operation.

Two laser manufacturers have conducted large multicenter clinical trials and obtained approval from the FDA to market their devices. The approval at this time is limited to the indication of myopia. In the United States, estimates are that 90% of persons with myopia have five diopters or less of myopia. Because the approval from the FDA extends to those with as much as six or seven diopters, most myopic persons are possible candidates for this procedure.

The efficacy of photorefractive keratectomy has been clearly established. About 94% to 95% of patients will achieve 20/40 or better vision, without glasses or contact lenses, as a result of the procedure. This is the level of vision required to pass a driver's license vision test without correction. On the other hand, this level of vision often is not adequate to allow all patients to perform all activities without correction. The percentage of eyes that achieve 20/20 vision is related to the severity of the nearsightedness being treated, but is substantially less than the likelihood of achieving 20/40 vision. Overall in the studies, about 50% to 55% of eyes treated with this procedure achieve 20/20 vision.

Patients considering excimer laser photorefractive keratectomy need to understand that there is a small but well-quantified risk to vision with this procedure. About 1% of patients have a loss of best-corrected visual acuity as a result of the procedure. By definition, this means that after the operation, patients cannot be corrected with glasses back to the level of vision that they had before the operation. Thus, a person who sees 20/20 with glasses before the operation may no longer see 20/20 after it, with or without glasses. Therefore, when weighing the decision to have the operation, patients need to consider the possible effects of this loss of vision and carefully weigh the risks of the procedure against the perceived benefits. Perceived benefits often cited by patients who are considering or who have had refractive surgery include the following: decreased dependence on corrective lenses, avoidance of discomfort associated with contact lens wear, and the ability to participate in sports or occupations in which the use of corrective lens wear is problematic.

The procedure is done on an outpatient basis using topical anesthesia. The patient is instructed to fixate on a target while the surgeon centers the laser. The corneal surface epithelium is removed, and the corneal stroma is then reshaped by the laser according to a computer-determined algorithm that is based on the preoperative measurements of the refractive error. After the operation, the eye is treated with topical antibiotic and anti-inflammatory medications and often a thin, soft contact lens until the corneal surface has healed. Although the procedure itself is painless, patients may have mild to moderate, or occasionally more than moderate, "pain" during the first day or two after the procedure.

Not everyone is an appropriate candidate for excimer laser photorefractive keratectomy. Coexisting severe ocular disease, such as glaucoma or dry eye, may disqualify a patient from consideration. In addition, it is important that patients have appropriate expectations regarding the outcome of the procedure. A patient who wishes to reduce dependence on corrective lenses for most activities of daily living may be an appropriate candidate, but a person who demands "perfect" uncorrected vision after surgical treatment and a total elimination of spectacles or contact lenses for all tasks should be counseled not to have the procedure at this time.

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New Agents for the Treatment of Glaucoma

GLAUCOMA is a disease state where the intraocular pressure is too high for the health of the optic nerve. This causes a progressive but treatable optic neuropathy affecting five to 10 million North Americans. At a clinical detection rate of 50%, upwards of 116,000 people in the United States are blind in both eyes as a result of this disease. Glaucoma is more common among elders in whom a large number of concurrent medical conditions may exist. Existing agents used in the treatment of glaucoma may have decreased usefulness in this patient population because of preexisting or developing cardiopulmonary problems, allergy, depression or other alterations in mentation, nephrolithiasis, or induced visual disturbances. Clinicians caring for patients with glaucoma have welcomed the introduction of two new agents for the treatment of the disease.

Latanoprost 0.005% (Xalata) is a new phenyl-substituted prostaglandin ($PGF_2\alpha$) analogue. It is the first drug in a new class of ocular hypotensive agents. Extremely potent, it is a lipophilic prodrug that is activated by enzymatic hydrolysis of an ester linkage. It has an unusual mechanism of action: it increases the uveal scleral (nontrabecular) outflow. Agents affecting trabecular outflow or aqueous production have a pressure-lowering limitation set by the episcleral venous pressure. Latanoprost, therefore, has a theoretical advantage because intraocular pressures can be lowered below the episcleral venous pressure. Before U.S. Food and Drug Administration approval, this pharmaceutical agent was studied in more than 800 patients at three separate centers in the United States, Great Britain, and Scandinavia. In Great Britain and Scandinavia, it was found to be equally efficacious to timolol maleate 0.5% (Timoptic). In the United States, it was found to be more efficacious ($P < .001$) than timolol maleate 0.5%. In these studies, foreign body sensation, stinging, punctate epithelial keratopathy, and pain occurred with both agents to varying amounts. Conjunctival hyperemia, although mild and primarily cosmetic, was more common in patients treated with latanoprost ($P < .001$). Although the cardiopulmonary safety profile of this agent is excellent, it does produce an

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interesting ocular side effect. The use of this agent can result in a progressive darkening of the iris (10%). This effect has been extensively investigated and has found to be due to the increased production of melanin by melanocytes and is not related to an increased number of melanocytes.

Brimonidine tartrate 0.2% is a potent and highly selective α_2-adrenergic agonist that decreases the intraocular pressure by decreasing aqueous production and increasing uveal scleral outflow. Brimonidine is the second agent available for use in the treatment of glaucoma in the a-adrenergic agonist class. It differs from apraclonidine hydrochloride (Iopidine) by the addition of a quinoxaline ring system to the parent molecule and use of bromine rather than chlorine substitution. Brimonidine has been shown to be 30 times more selective than apraclonidine for the α_2- *vs* α_1-adrenergic receptors. In clinical trials at twice-a-day dosing, brimonidine tartrate 0.2% has been more efficacious than betaxolol hydrochloride (Betoptic-s 0.25%, twice a day) and comparable in efficacy to timolol maleate 0.5% (Timoptic 0.5%, twice a day). Tachyphylaxis with the use of brimonidine has not been a notable problem, but ocular allergy ($P < .001$), dry mouth ($P < .001$), and conjunctival follicles ($P = .001$) were more common in patients treated with brimonidine, whereas burning and stinging were more common in patients treated with timolol maleate ($P < .001$). Drowsiness occasionally occurs with use. These two agents are effective and welcome additions to the glaucoma armamentarium.

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MORBIDITY AND MORTALITY WEEKLY REPORT

Update: Influenza Activity—United States and Worldwide, 1996–97 Season, and Composition of the 1997–98 Influenza Vaccine

IN collaboration with the World Health Organization (WHO), its international network of collaborating laboratories, and state and local health departments, CDC conducts surveillance to monitor influenza activity and to detect antigenic changes in the circulating strains of influenza viruses. This report summarizes surveillance for influenza in the United States and worldwide during the 1996–97 influenza season and describes the composition of the 1997–98 influenza vaccine.

United States

Influenza activity began in October 1996, increased at the end of November, peaked during late December through early January 1997, and decreased slowly through March. The number of state and territorial epidemiologists who reported regional* or widespread activity peaked at 38 during the week ending January 4, 1997. Widespread activity was last reported for the week ending March 22; only two states (Alaska and Arizona) reported regional activity for the week ending April 5. The percentage of patient visits to sentinel physicians for influenza-like illness exceeded baseline levels (0% to 3%) for five consecutive weeks from December 1, 1996 through January 4, 1997, and peaked at 7% during the weeks ending December 14 and December 28. From September 29, 1996, through April 5, 1997, WHO collaborating laboratories in the United States tested 35,623 specimens for respiratory viruses, and 6,344 (18%) were positive for influenza. Of these, 5,126 (81%) were influenza type A, and 1,218 (19%) were type B (Fig. 1). All of the subtyped influenza type A viruses were influenza A(H3N2). Influenza type A viruses predominated from October through the first week of February, but the number of influenza type B isolates began increasing during January and were more commonly reported than influenza type A after mid-February; 88% of all isolates during February 9 to April 5, 1997, were influenza type B.

The proportion of deaths attributed to pneumonia and influenza (P&I) reported by 122 U.S. cities exceeded the epidemic threshold† for 10 consecutive weeks from December 8, 1996, through February 15, 1997, before returning to baseline (Fig. 2). This was the earliest sustained increase in P&I mortality since at least the 1986–87 influenza season, the earliest season for which these data were reviewed.

Worldwide

Influenza activity was moderate to severe in the northern hemisphere from October 1996 through March 1997. Overall, influenza A(H3N2) viruses predominated in North America and Europe, but influenza type B was isolated frequently. In many countries, influenza type A viruses predominated during the early part of the season, but influenza type B isolates became more commonly isolated than influenza type A by the end of the season. Influenza type B predominated in most Asian countries, but epi-

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*Levels of activity are 1) *no activity;* 2) *sporadic*-sporadically occurring influenza-like illness (ILI) or culture-confirmed influenza, with no outbreaks detected; 3) *regional*—outbreaks of ILI or culture-confirmed influenza in counties with a combined population of <50% of the state's total population; and 4) *widespread*—outbreaks of ILI or culture-confirmed influenza in counties with a combined population of 50% of the state's total population.

†The epidemic threshold is 1.645 standard deviations above the seasonal baseline. The expected seasonal baseline is projected using a robust regression procedure in which a periodic regression model is applied to observed percentages of deaths from P&I since 1983.

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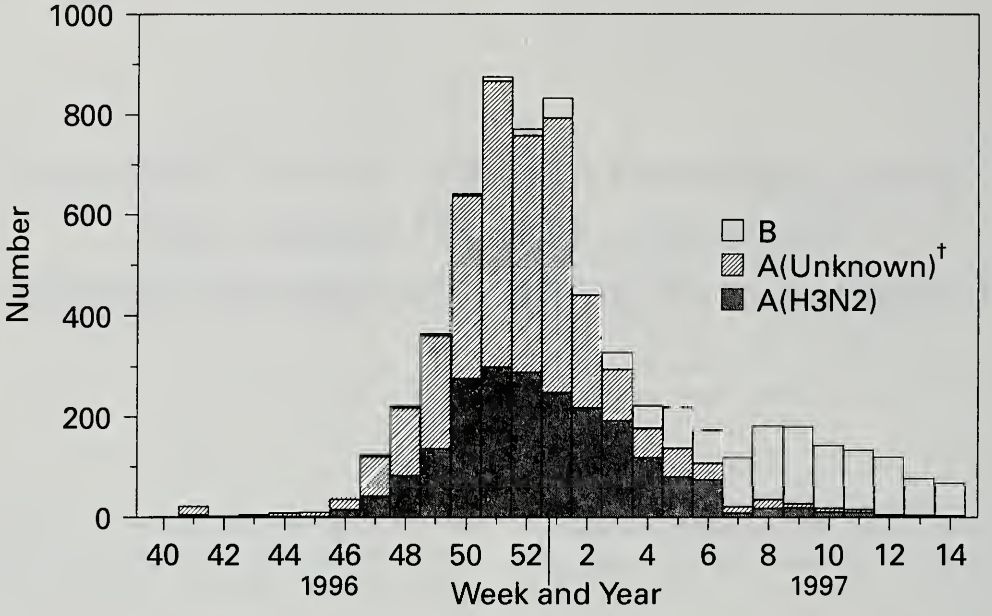
Figure 1.—Number of influenza virus isolates reported by the World Health Organization collaborating laboratories—United States, September 29, 1996–April 5, 1997*



*n=6344. No influenza A(H1N1) isolates were identified.

†Data reported are preliminary. Many laboratories either do not perform influenza virus subtyping tests or delay performing these tests until the end of the influenza season.

demic influenza in Japan was due predominantly to influenza A(H3N2) viruses. Few laboratory-confirmed cases of influenza A(H1N1) were reported worldwide.

Influenza A(H3N2) viruses predominated in Canada, Colombia, Finland, France, Japan, Netherlands, Russia, Slovakia, Spain, and the United Kingdom. In Colombia, an influenza A(H3N2) epidemic during August-November was the most severe influenza epidemic reported in that country since the pandemic of 1968-69. Influenza A(H3N2) was the only influenza virus type/subtype reported in Greece and Poland. Influenza A(H3N2) activity also was reported in Bulgaria, China, French Guiana and Guadeloupe, Germany, Guam, Hong Kong, Hungary, Ireland, Jamaica, Korea, Madagascar, Norway, Portugal, Reunion, Romania, Saudi Arabia, Senegal, Singapore, Sweden, Switzerland, Taiwan, Thailand, Uruguay, and Former Yugoslavia. In Israel, influenza A(H3N2) activity was preceded by influenza type B activity.

Sporadic influenza A(H1N1) cases were reported in Argentina during October, in Belarus and Italy during January, in the southern half of France and Germany during February, and in Romania during January and February; an outbreak of influenza A(H1N1) occurred in a primary school in Romania during January. Other countries reporting isolation of influenza A(H1N1) viruses include Canada, China, Hungary, Russia, Singapore, Switzerland, and Taiwan. Influenza A(unsubtyped) activity was reported in Australia, Austria, Belarus, Belgium, Croatia, Czech Republic, Denmark, Iceland, Italy, Latvia, Malaysia, and New Zealand.

Influenza type B viruses were predominant in China, the Czech Republic, Denmark, Hong Kong, Iran, Israel, and Singapore. Increases in influenza type B activity followed earlier influenza A(H3N2) activity in Austria, Belgium, Canada, Finland, France, French Guiana and Guadeloupe, Netherlands, Portugal, Spain, the United Kingdom, and Former Yugoslavia. Both influenza type A and type B were reported in Belarus, Croatia, Germany, Hungary, Iceland, Italy, Latvia, Norway, Sweden, and Switzerland. Other countries reporting influenza type B activity included Australia, Chile, Fiji, Korea, Malaysia, Nepal, Romania, Russia, Senegal, Saudi Arabia, Slovakia, Taiwan, and Thailand.

Composition of the 1997–8 Vaccine

The Food and Drug Administration's Vaccines and Related Biological Products Advisory Committee (VRBPAC) recommended that the 1997-98 trivalent in-

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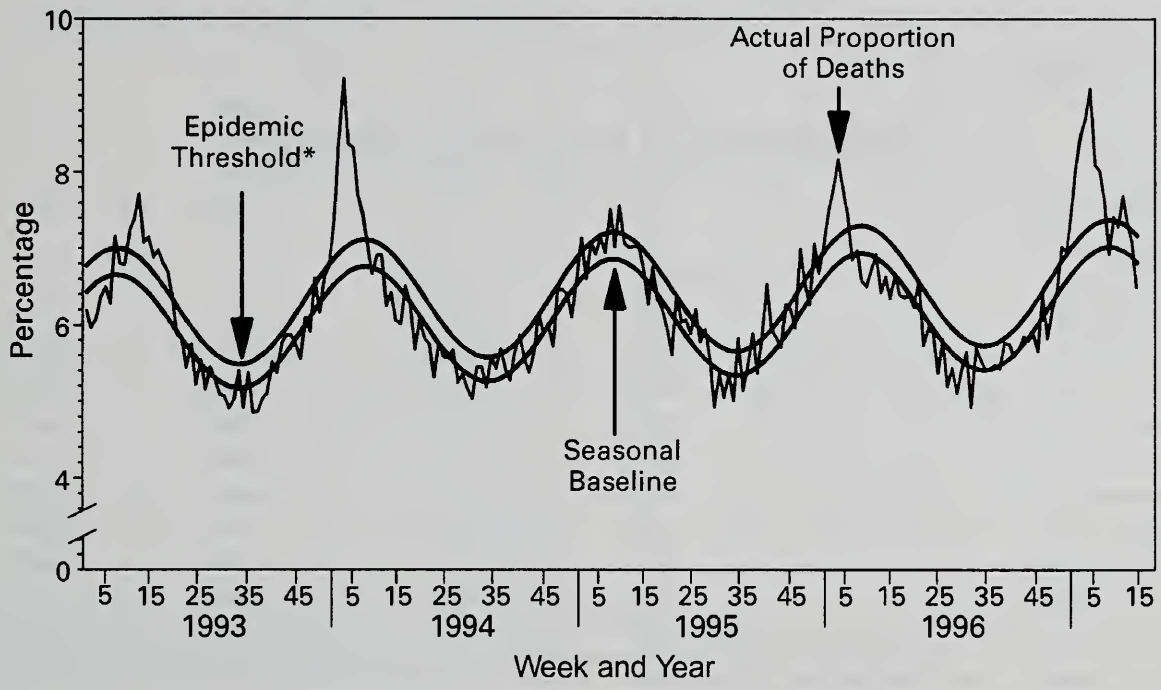
Figure 2.—Weekly pneumonia and influenza (P&I) mortality as a percentage of all deaths in 122 cities —United States, January 3, 1993 to April 5, 1997



*The epidemic threshold is 1.645 standard deviations above the seasonal baseline. The expected seasonal baseline is projected using a robust regression procedure in which a periodic regression model is applied to observed percentages of deaths from P&I since 1983.

fluenza vaccine for the United States contain A/Wuhan/359/95-like (H3N2), A/Bayern/07/95-like (H1N1), and B/Beijing/184/93-like viruses. This recommendation was based on antigenic analyses of recently isolated influenza viruses and the antibody responses of persons vaccinated with the 1996-97 vaccine.

Although influenza A(H1N1) viruses were isolated only sporadically during the 1996–97 influenza season, during 1996 an increasing number of antigenically characterized isolates, represented by A/Bayern/07/95, demonstrated a reduction in titer to A/Texas/36/91 and A/Taiwan/01/86 ferret antisera (Table 1).[1] A second group of antigenically distinct influenza A(H1N1) viruses, represented by A/Wuhan/371/95, has been identified in China and Hong Kong since 1995 and in a single isolate in Singapore during 1996. Vaccines containing A/Texas/36/91 induced a good antibody response to the vaccine strain but less frequent and reduced antibody responses to recent influenza A(H1N1) isolates such as A/Bayern/07/95. Therefore, VRBPAC recommended changing the influenza A(H1N1) component for the 1997-98 season to an A/Bayern/07/ 95-like virus. The antigenically equivalent strain that will be used by U.S. vaccine manufacturers is A/Johannesburg/82/96.

Most antigenically characterized influenza A(H3N2) viruses isolated worldwide were similar to the reference strain A/Wuhan/359/95 and the antigenically equivalent vaccine strain A/Nanchang/933/95. Vaccines containing A/Nanchang/933/95 induced antibodies with similar frequency and titer to the vaccine virus and to recently isolated influenza A(H3N2) strains. Therefore, VRBPAC recommended retaining A/Nanchang/ 933/95 in the 1997-98 influenza vaccine.

Most influenza type B viruses that have been antigenically characterized are similar to the reference strains B/Beijing/184/93 and B/Harbin/07/94. Although a small number are related to the antigenically distinct B/Victoria/02/87-like viruses, these viruses have not been isolated in the United States since 1991 and have circulated recently only in Asia. Vaccines containing B/Harbin/07/94 induced antibodies with similar frequency and titer to the vaccine virus and to influenza type B strains recently isolated in North America and Europe. Therefore, VRBPAC recommended retaining B/Harbin/07/94 in the 1997-98 vaccine.

Reported by: Participating state and territorial epidemiologists and state public health laboratory directors. World Health Organization collaborating laboratories. Sentinel Physicians

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Table 1.—Hemagglutination-inhibition titers of influenza A(H1N1) viruses with serum specimens from infected ferrets*

Viral antigen	Ferret antiserum A/Taiwan/01/86	A/Texas/36/91	A/Bayern/07/95	A/Wuhan/371/95
Reference antigen				
A/Taiwan/01/86	1,280	320	640	<40
A/Texas/36/91	640	1,280	640	40
A/Bayern/7/95	640	640	1,280	40
A/Vuhan/371195	<40	<40	<40	640
Recent isolates				
A/Auckland/6/96	640	320	1,280	40
A/Brazil/140/96	640	160	1,280	40
A/Chile/2110/96	320	160	1,280	40
A/Nagasaki/37/96	160	640	640	<40
A/Poiniers/191/96	320	320	640	<40
A/Zambia/546/96	320	320	640	80
A/Switzerland/6081/97	320	320	640	40
A/Beijing/262/95	40	<40	.80	640
A/Singapore/15/96	<40	40	<40	640
A/Nanchang/1/96	<40	<40	80	32

*A four-fold difference in hemagglutination-inhibition titer between two viruses usually indicates antigenic variation between viruses.

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Influenza Surveillance System. M. Zambon, Ph.D., Central Public Health Laboratory, A. Hay, Ph.D., National Institute for Medical Research, London; G. Schild, D.Sc., J. Wood, Ph.D., National Institute for Biological Standards and Control, Hertfordshire, England. I. Gust, M.D., A. Hampson Commonwealth Serum Laboratories, Parkville, Australia. K. Nerome, Ph.D., National Institute of Health, Tokyo, Japan. Y. Guo, Institute of Virology, National Center for Preventive Medicine, Beijing, People's Republic of China. Division of Emerging and Other Communicable Diseases Surveillance and Control, World Health Organization National Influenza Centers, Geneva, Switzerland. Divison of Virology, Center for Biologics Evaluation and Research, Food and Drug Administration. Influenza Branch, Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC .

Editorial Note: This was the fifth season since the 1986-87 season in which influenza A(H3N2) viruses have predominated; during the other five years, at least 7% of isolates were influenza A(H3N2). The pattern of influenza activity in the United States during the 1996-97 season was characterized by a sudden, sharp increase in morbidity followed by a sustained increase in P&I-related deaths. Although outbreaks were reported among all age groups, most outbreaks reported to CDC occurred among elderly nursing-home residents. Since mid-February, more influenza type B than influenza type A has been isolated (Fig. 1), suggesting that type B viruses may circulate more widely next winter. Although no influenza A(H1N1) viruses have been isolated in the United States during the 1996–97 season, both influenza A(H1N1) and A(H3N2) viruses may circulate during the 1997–98 season.

Strains to be included in the influenza vaccine usually are selected during the preceding January through March because of scheduling requirements for production, quality control, packaging, and distribution of vaccine for administration before onset of the next influenza season. Recommendations of the Advisory Committee on Immunization Practices for the use of vaccine and antiviral agents for prevention and control of influenza will be published in an *MMWR Recommendations and Reports* on April 25, 1997.[2]

REFERENCES

1. World Health Organization: Recommended composition of influenza virus vaccines for use in the 1997-1998 season. *Wkly Epidemiol Rec* 1997; 72:57-61.
2. CDC: Prevention and control of influenza: Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR* 1997; 46(no.RR-9) (in press).

THE MEDICAL LETTER

Sparfloxacin and Levofloxacin

SPARFLOXACIN (*Zagam*—Rhône-Poulenc Rorer) and levofloxacin (*Levaquin*—Ortho-McNeil) are the newest fluoroquinolone antimicrobials to be approved by the U.S. Food and Drug Administration. Sparfloxacin in a once-daily oral preparation is being marketed for treatment of community-acquired pneumonia and acute bacterial exacerbations of chronic bronchitis. Levofloxacin, which is the active stereoisomer of ofloxacin (*Floxin*), is available for either oral or parenteral use; it is approved for once-daily treatment of community-acquired pneumonia, acute exacerbations of chronic bronchitis, sinusitis, skin and skin structure infections, and complicated urinary tract infections.

ANTIBACTERIAL ACTIVITY—Fluoroquinolones inhibit bacterial replication and transcription by blocking DNA gyrase. They are active *in vitro* against many gram-positive and gram-negative bacteria, but older fluoroquinolones have only marginal activity against *Streptococcus pneumoniae* (pneumococci). *In vitro* levofloxacin and sparfloxacin are somewhat more active than older fluoroquinolones against gram-positive organisms such as *S. pneumoniae*, including pneumococcal strains highly resistant to penicillin, *Enterococcus* and *Staphylococcus aureus*. However, methicillin-resistant staphylococci that are resistant to ciprofloxacin, now a high percentage of strains in some hospitals, are likely also to be resistant to levofloxacin and sparfloxacin (Eliopoulos GM, et al: *Drugs*, 49 suppl 1995; 2:48; Trautmann M, et al: *Antimicrob Agents Chemother*, 1996; 40:776).

Like other fluoroquinolones, sparfloxacin and levofloxacin are active against many strains of *Legionella pneumophila, Chlamydia* spp., *Mycoplasma pneumoniae,* and *Mycobacterium tuberculosis;* sparfloxacin is more active than levofloxacin or other fluoroquinolones against *Mycoplasma.* All fluoroquinolones are active against *Haemophilus influenzae* and *Moraxella catarrhalis,* including beta-lactamase-producing strains, and generally against *Neisseria* species, but resistance of gonococci to fluoroquinolones is increasing. Levofloxacin and sparfloxacin are also active against most organisms responsible for bacterial gastroenteritis, including many strains of *Salmonella, Shigella, Yersinia enterocolitica, Campylobacter jejuni,* and *Escherichia coli.* Both of the new drugs have moderate activity against anaerobes. Both are less active than ciprofloxacin against *Pseudomonas aeruginosa.*

PHARMACOKINETICS—Levofloxacin and sparfloxacin are both well absorbed after oral administration, reaching peak serum concentrations in one to two hours and four to five hours respectively. More than 80% of the dose of levofloxacin and about 50% of the dose of sparfloxacin are excreted in urine: dosage of both should be decreased in patients with decreased renal function. As with other fluoroquinolones, concentrations of sparfloxacin and levofloxacin in urine, stool, lung, and macrophages may exceed serum levels, but penetration into cerebrospinal fluid may be insufficient for treatment of meningitis.

DRUGS FOR COMMUNITY-ACQUIRED PNEUMONIA—Ciprofloxacin and ofloxacin are both FDA-approved for treatment of community-acquired pneumonia, but clinical failures, including spread to the meninges, have occurred when ciprofloxacin was used to treat pneumococcal respiratory infections (Giamarellou H: *Drugs*, 49 suppl 1995; 2:58). The treatment of pneumonia has been complicated by the emergence of *S. pneumoniae* strains relatively or highly resistant to penicillin and sometimes to cephalosporins (*Medical Letter*, 1996; 38:25). *Medical Letter* consultants have recommended cefotaxime, or ceftriaxone for treatment of hospitalized patients with community-acquired pneumonia; high-dose parenteral penicillin (10 million units/day) is an effective alternative. For ambulatory patients, *Medical Letter* consultants have recommended oral erythromycin, azithromycin or clarithromycin, or an oral cephalosporin, but these drugs may not be effective against highly resistant pneumococci (Doern GV, et al: *Antimicrob Agents Chemother*, 1996; 40:1208).

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COST OF SOME DRUGS FOR COMMUNITY-ACQUIRED PNEUMONIA

Drug	**Daily dosage**	**Cost ($)***
ORAL		
Azithromycin—*Zithromax* (Pfizer)	500 mg on day 1, then 250 mg once/day days 2-5	37.31
Cefuroxime axetil—*Ceftin* (Glaxo Wellcome)	250-500 mg bid	70.01–132.82
Ciprofloxacin—*Cipro* (Bayer)	500-750 mg bid	72.47–111.72
Clarithromycin—*Biaxin* (Abbott)	250 mg bid	65.20
Erythromycin, enteric coated—generic price	250-500 mg qid	7.65–15.30
Ery-Tab (Abbott)		9.78–16.50
Levofloxacin—*Levaquin* (Ortho-McNeil)	500 mg once/day	70.08
Ofloxacin—*Floxin* (Ortho)	400 mg bid	82.85
Sparfloxacin—*Zagam* (Rhone-Poulenc Rorer)	400 mg on day 1, then 200 mg once/day	73.58
PARENTERAL		
Cefotaxime—*Claforan* (Hoechst Marion Roussel)	1-2 gm IV q8h	101.43–190.47
Ceftriaxone—*Rocephin* (Roche)	1 gm IV q12h or 2 gm once/day	220.09
Levofloxacin—*Levaquin* (Ortho-McNeil)	500 mg IV once/day	118.80

*Cost to the pharmacist for 10 days' oral or three days' parenteral treatment based on wholesale price (AWP or HCFA) listings in *Drug Topics Red Book* 1997 and April *Update.*

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CLINICAL TRIALS—Levofloxacin and sparfloxacin have been effective in patients with community-acquired lower respiratory infections, including pneumococcal infections, and levofloxacin has been effective in patients with urinary tract infections and in some with skin and soft tissue infections (Davis R, Bryson HM: *Drugs,* 1994; 47:677; Goa KL, et al, *Drugs,* 1997; 53:700). Treatment of pneumococcal infections with sparfloxacin, 200 mg PO q.d. after a loading dose of 400 mg, was as effective as amoxicillin/clavulanate 500/125 mg t.i.d., erythromycin 1 g b.i.d., amoxicillin 1 g t.i.d., or amoxicillin 1 g t.i.d. plus ofloxacin 200 mg b.i.d. (Lode H, et al: *Eur Respir J,* 1995; 8:1999; Portier H: *J Antimicrob Chemother,* 37 suppl A 1996:83). Oral levofloxacin 500 mg once daily was about as effective as cefuroxime axetil 250 mg b.i.d. in patients with acute exacerbations of chronic bronchitis (DeAbate CA, et al: *Respir Care,* 1997; 42:206). Levoflaxacin and sparfloxacin have been about as effective as amoxicillin/clavulanate or cefuroxime axetil in treating acute bacterial sinusitis (Gehanno P, et al: *J Antimicrob Chemother,* 37 suppl A 1996:105; Adelglass J, et al: *Infect Dis Soc Am,* 1996; 34:89, abstr 290).

ADVERSE EFFECTS—All fluoroquinolones occasionally can cause skin rashes or gastrointestinal disturbances. Central-nervous-system toxicity, including dizziness, insomnia, confusion, hallucinations, and seizures, can occur, particularly in elderly patients. Hypersensitivity reactions including vasculitis, serum sickness-like reactions, and anaphylaxis have occurred rarely (Ball P: *Drug Safety,* 1996; 13:343). Tendinitis or tendon rupture has occurred with sparfloxacin, as it has with other fluoroquinolones, and will probably occur with levofloxacin as well. All fluoroquinolones have been associated with cartilage damage in high-dosage animal studies, and none is recommended for use in children less than 18 years old or in pregnant or nursing women.

Phototoxicity, sometimes severe, has occurred in about 8% of patients taking sparfloxacin, including some who used sunscreens; the manufacturer advises cautioning patients to avoid direct and indirect sunlight while taking the drug and for five days afterward. Prolongation of the QT interval has also occurred in patients treated with sparfloxacin, and torsades de pointes has been reported (Dupont H: *Eur J Clin Microbiol Infect Dis,* 1996; 15:350; Demolis JL, et al: *Br J Clin Pharmacol,* 1996; 41:499).

CONCLUSION—Sparfloxacin and levofloxacin appear to be effective for treatment of community-acquired pneumonia, and may prove to be more effective than older fluoroquinolones against pneumococci. Either could be considered for oral treatment of respiratory infections that could be caused by pneumococci highly resistant to penicillin, but the phototoxicity of sparfloxacin will probably limit its use.

Mentors of the Past

MORRIS A. WESSEL, M.D.

Introduction

I RECENTLY retired after completing four decades of pediatric practice in New Haven, Connecticut. As I review my satisfactions during these busy years, I recall with appreciation three teachers—Dr. Grover Powers, Dr. Edith Jackson, and Dr. Sally Provence—who were important mentors during my training. I wish to describe the influence these individuals had on my activities as a pediatric practitioner in my community.

Grover Powers, M.D.

I first met Dr. Grover Powers, chairman of pediatrics at Yale Medical School from 1927-1951, during my pediatric rotation as a third-year medical student in 1942. He was an inspiring individual. His presence at a child's bedside, a case conference, or a committee meeting assured that humanistic needs of children and their parents would receive high priority.

I recall clearly my introduction 55 years ago to the pediatric clerkship. I reported with four classmates at nine o'clock to the Trask Conference Room. Dr. Grover Powers, a rotund individual with a shining bald head, appeared promptly. He wore a loosely fitting tan laboratory coat, believing that starched white coats frightened children.

Dr. Powers, a man of few words, said "Come along with me," and walked silently to the pediatric ward. We dutifully followed to the room of a six-year-old boy busily devouring his breakfast. Dr. Powers stood at the bedside gazing at the child for a few seconds. He suddenly turned and walked out of the room. I was confused and commented, "I thought you were going to examine this child."

He glanced at me with obvious disapproval stating "That child is eating breakfast. You wouldn't expect me to interrupt his meal, would you? We will return later."

I was impressed that a departmental chairman would be so concerned about a child's meal. I learned in 1980 in a conversation with Dr. Roswell Gallagher that this dramatic scene was well planned! He recalled that on his initial day as a pediatric clerk in 1930 Dr. Powers also had demonstrated his concern for a child eating breakfast!

I soon discovered Grover Powers's profound respect for children and parents and for students, house officers, and colleagues, prevailed in the offices, wards, and laboratories of the department. I appreciated that he maintained separate ward rounds for students and adapted discussions at our level of knowledge and clinical experience. This was a vastly different experience than the usual ward rounds when students stood on the periphery and frequently were unable to hear, or comprehend, the discussions! I soon learned that Dr. Powers expected us to be well acquainted with the course of our patients and be familiar with the latest temperature, pulse, respiratory rate, fluid intake and output, and bacteriologic and other laboratory studies. However, he usually responded to one's recital with "Tell me about how the child and the parents are feeling!"[1]

Whether it was at a seminar, ward rounds, grand rounds, or a committee meeting, I sensed Grover Powers's conviction—that a pediatrician must be dedicated to improving the physical and psychological health of children in the local, national, and international community. I recall his presentation to students and house officers at the first grand rounds of the academic year in 1949 when he stated, "What we in pediatrics seek to do by example, word, or deed is to demonstrate a way of life, a way of medical life, more narrowly, a way of pediatric life."[2]

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MORRIS A. WESSEL, M.D., clinical professor of pediatrics, Yale University School of Medicine.

Grover Powers was proud of his small department with three major sections. Dr. Daniel Darrow supervised research and treatment in the metabolic aspects of illness, Dr. James Trask in infectious diseases and epidemiological areas, and Dr. Edith Jackson in the behavioral areas. The proximity of the wards, laboratories, and offices encouraged frequent informal consultation at all levels. I remember on many occasions standing in the hall discussing with house officers and faculty members the care of a child hospitalized on an adjacent ward. I presumed that participation of individuals representing these three clinical disciplines was of equal importance. It was only when I visited other children's services that I realized that this organizational pattern strongly supported by a chairman was quite rare!

I observed many other unique aspects of the pediatric service. Recognizing that the initial period of caring for a new baby was difficult for many parents, Dr. Powers instituted a plan for interns to visit homes a few days after the discharge of mother and baby from the hospital. This assignment provided opportunity for interns to observe healthy infants and introduce them to the value of a pediatrician's support during the initial phase of parenthood.

The interns' observations that many parents were ill prepared to care for their infants led to the establishment in 1946 of elective *Rooming In* arrangements for mothers and babies during the lying in period. The inauguration of this plan at Yale-New Haven Hospital was largely due to Grover Powers' extraordinary ability to persuade colleagues to collaborate in the development of this program. The group, consisting of Dr. Herbert Thoms, chairman of obstetrics, Dr. Herbert Miller, pediatrician in charge of the nursery, Dean Elizabeth Bixler of the Yale School of Nursing, Dr. Edith Jackson, child psychiatrist, Dr. Albert Snoke, director of the hospital, and Miss Kate Hyder, supervisor of obstetrical nursing, spent many hours developing architectural plans for a *Rooming In* unit and arranging for the assignment of one nurse to care for mother and baby rather than assigning an obstetrical nurse to the mother and a nursery nurse to the baby.[3]

I was impressed with Grover Powers's interest in all aspects of children's lives. He considered assignment in the pediatric clinic to be an essential experience for medical students and house officers. He had a deep concern for families who sought care at the clinic. I learned during my clinic assignment that he expected medical students and house officers to have a broad interest in the lives of children served in the clinic. When a child having difficulty in school presented no evidence of disease, he expected students to consider stresses in their lives which may have contributed to their poor performance in school.

The broad conception of a pediatrician's role in society was exemplified by Grover Powers's involvement in planning the construction of the Southbury Training School for handicapped children. This model state institution, opened in 1940, provided living arrangements in small cottages for children, extensive research facilities, and high quality medical care. Yale pediatric house officers rotated through this program.

I recall that Dr. Powers played a vitally important role in the development of the programs of the U.S. Children's Bureau. He arranged for me to visit Washington, D.C., and meet various members of that department. This agency administered grants to states supporting services in maternal and child health, and medical care and rehabilitation services for children with chronic conditions such as cerebral palsy, cystic fibrosis, and cardiac conditions.

When I began my pediatric clerkship in 1942, I anticipated that as a practicing pediatrician I would be caring for well babies and moderately sick children in an office, visiting homes when a child suffered an acute illness in the middle of the night, and coordinating care of critically ill children in the hospital. Grover Powers's devotion to the total needs of children widened my horizons! I realize now, half a century later, that my involvement in programs for children in the local, state, and national community has been the direct result of having observed that Dr. Powers considered these responsibilities to be an important aspect of a pediatrician's role in society!

Edith B. Jackson, M.D.

I met Dr. Edith Jackson in 1942 during my pediatric clerkship when I sought her advice concerning an unhappy seven-year-old boy hospitalized and in traction with a broken femur. She had joined the Yale department of pediatrics in 1923 as a member of the Rickets Project directed by Edwards Park and Grover Powers. The studies of this group revealed that rickets, widespread among children at that time, was preventable by the oral administration of Vitamin D in the form of cod liver oil.

The contact with families in this project stimulated Dr. Jackson to consider the application of preventive principles in behavioral areas. In 1928 she took a leave of absence from Yale to accept a psychiatric residence in Washington, D.C., and in 1930 she traveled to Vienna to obtain psychoanalytic training with several other American physicians in the group associated with Sigmund Freud.

Dr. Jackson returned to the Yale pediatrics department in 1936 and until her retirement in 1959 directed studies and treatment of children in the behavioral areas. I met Dr. Jackson in 1942 during my pediatric clerkship when I sought her advice concerning my inability to comfort my

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patient. She greeted me graciously. I remember being startled by her initial question: "How did you happen to come to me now with your concerns?"

As I related my frustrations at being at a loss as to how to comfort this child, I suddenly began to talk about my own tonsillectomy in childhood. I realized that I was particularly upset at my patient's distress because it awakened painful memories of my own hospitalization at his age!

Dr. Jackson offered to meet weekly to discuss my concerns about patients. She shared with me the reports of Anna Freud and Dorothy Burlingham describing effects of family disruption on the behavior of children evacuated from London to the countryside.[4,5] These children often presented with feeding difficulties, sleep disturbances, and loss of bowel and urinary control. I soon observed that many children hospitalized on the Yale pediatric wards presented with comparable behavioral problems!

Regression in young children during illness and separation from family and home is now recognized as a normal reaction. This concept was just beginning to be appreciated by the pediatricians in the United States in 1942. It is impressive that the discussions of Anna Freud's observations took place in a pediatrics department 55 years ago between Dr. Edith Jackson, a psychoanalyst trained in Vienna, and myself while a third-year medical student!

I was fortunate in 1948, having completed an internship at Babies Hospital at Columbia-Presbyterian Medical Center, three years of military service, and an 18-month pediatric fellowship at the Mayo Clinic, to be awarded a fellowship in the *Rooming In* project in the department of pediatrics at Yale School of Medicine. *Rooming In*, as an elective choice during the lying in period, was instituted in 1946 under the supervision of Dr. Jackson. This arrangement encouraged mothers to have their infants at the bedside as much as desired during the lying-in period. Fathers were encouraged to visit at all times. The nurses in *Rooming In* were assigned as "mother and baby nurses," a remarkable innovation at that time.

The fellowship program resulted from Dr. Edith Jackson's conviction that pediatricians and nurses had an important professional role supporting parents as they entered a new phase of their lives. I had achieved moderate security in caring for sick infants and children. I looked forward to improving my ability to support parents as they assumed care of their babies.[6]

Dr. Jackson selected a group of primiparous couples for participation in a study of parent-child relationships. Pediatric fellows interviewed expectant couples during pregnancy. I was surprised how eagerly the women and men discussed feelings and concerns as they anticipated becoming parents. I became aware of the psychological upheavals which women, and men too, experienced during a pregnancy. I was surprised to observe that many expectant fathers experienced morning sickness, food fads, and other aches and pains.

Rooming In fellows assumed pediatric care of the babies during the lying in period, visited homes shortly after discharge, and provided well-baby care for the first year of life. Daily rounds with Edith Jackson encouraged discussion of our observations of parents and babies during hospitalization, at home, and in the well-baby clinic.

These daily discussions focused on normal life experiences and differed tremendously from the usual ward rounds when the emphasis of necessity dealt with examination of a patient, laboratory studies, and the course of an illness.

I discovered that examining a baby at the mother's bedside, particularly if the father was present, was appreciated greatly by parents. I became aware that common findings such as blueness of hands and feet, hemangiomata of the eyelids and nape of the neck, and distorted appearance of a baby's head following the delivery, which were "normal" to a pediatrician, were often considered by parents to be defects in their baby. When any illness occurred in the infant, it was a satisfying challenge to care for the infant and meet with the parents with whom we had become well acquainted during pregnancy.

I soon became aware of the importance of helping mothers establish breast feeding. Placing a pillow under a mother's arm or propping her back with adjustment of the hospital bed was appreciated. This may seem like a minimal item, but I learned that interest in helping a new mother as she nursed her infant firmly established the idea that, as the pediatrician, I wished to support her in every way possible in the nurturing role. A phone call shortly after discharge was appreciated and helped mothers and fathers feel confident as they experienced the initial exhaustion and the "baby blues" so common during the early days at home with a new baby.

Edith Jackson emphasized the enormous opportunity pediatricians have providing professional care at this initial phase in the life of a parent. Many patients in the population served were newcomers in the community and often received little support of parents, relatives, and neighbors "back Home" who so often play a prominent role at this transitional moment in the life of families.

I now realize that my experiences as a *Rooming In* fellow, supervised by Dr. Edith Jackson, provided an extraordinary preparation for my role as a practicing pediatrician. Edith Jackson demonstrated the importance of an attentive readiness to help young families, medical and nursing personnel, and pediatricians in training. It was because of her teachings that I routinely phoned new mothers a few days after they arrived home and main-

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tained continuous communication for a few weeks. I learned that time and energy spent in the initial phases of the life of a family establishes trust and confidence which continues into childhood and adolescence.[7]

Sally Provence, M.D.

I first met Dr. Sally Provence in 1949 when she joined the staff of the Yale Child Study Center. She had practiced pediatrics in Texas for a few years and felt that she was ill-prepared to respond to parents' concerns about the behavior of infants and young children. She closed her office to accept a fellowship to study infant and child behavior with Dr. Milton J. E. Senn in the department of pediatrics at Cornell-New York Hospital. When Dr. Senn assumed the directorship of the Child Study Center at Yale University in 1949 he invited her to join the staff and develop a Child Development Unit. This section, under her leadership, soon gained international recognition as an outstanding center for the study of development during infancy and preschool years. She retired in 1986.

In 1954, my third year of pediatric practice, many parents were seeking my advice concerning the behavior of their infants and toddlers. I was delighted when Dr. Provence invited me to participate in a longitudinal project studying parent-child relationships in a selected group of families.

My association with this project provided the opportunity to begin to comprehend the various experiences which affect maturation and development in the early years of life. I developed skill in developmental assessment and the ability to evaluate genetic influences, intrauterine insults, perinatal stresses, effects of illness or injury, and deficiencies in nurturing. This experience in evaluating infants and toddlers under Dr. Provence's supervision enabled me to provide this service in my pediatric practice and in my role as pediatric consultant at the Clifford Beers Guidance Clinic in New Haven.

Developing skill in assessing maturation and development is only the beginning of what I learned as a member of this group. Observing Dr. Provence interview parents and evaluate infants and toddlers was a unique experience. Her seemingly casual manner was deceptive. She had a special empathy for infants and toddlers and a rare ability to consider the complex aspects of the relationship between nurturers and babies. She was convinced that all parents wanted their children to grow and mature as healthy as was possible. She always looked for strengths and assets in every parent and respected them for what they were accomplishing in their nurturing role. Her attitude led to a quality of interchange which encouraged discussions of a child's development and provided opportunities to discuss how to help parents assume their role as effectively as possible.

Dr. Provence always considered the manner in which an infant or toddler adapted to the visit. Was he outgoing and full of eagerness and excitement? Or was he hesitant and needed to be coaxed? Was he temperamentally highly reactive and easily frustrated, or was he a jovial comfortable baby? I learned that a baby's manner of functioning depends on his bodily responses and his past experiences as well as the attitudes of his parents and other nurturers. I also learned that infants living in inadequately staffed institutions frequently demonstrated significant deficits, particularly in their ability to relate to adults.[8]

I became aware that many parents are unaware of age-appropriate behavior.[9] For example, a well-nurtured eight-month-old infant demonstrating a preference for his mother, evokes many different parental reactions. Some parents interpret this behavior as a sign of insecurity and assume that they have failed as nurturers. When one explains that this behavior is age-appropriate, demonstrating an appreciative trust in a mother arising from good nurturing, many women cherish this indication of their worth. They smile, cuddle their baby against their body, and often place a light kiss on the top of his head.

On the other hand, some parents find this dependent relationship dissatisfying and eagerly look forward to the time when their baby will be more independent and less attached. I learned that as a pediatrician one needs to recognize that parenthood is a developmental process with unique configurations in each family.

Many mothers are bewildered by a toddler's attachment to a favorite blanket, bottle, or toy, particularly when they leave home. Dr. Provence's explanation that a toddler considers this treasured object as a "little bit of the mother" is reassuring to parents. The ability to use a favorite blanket or toy suggests that having been well nurtured, a toddler can utilize this item as a reminder of the mother which sustains him as he extends his activities away from her presence and when he separates at bedtime.

Dr. Provence helped me develop a role as a consultant to a day care center, nursery, and/or public school. She emphasized that it is unwise to initiate a relationship to the staff by appearing the "expert," but rather one should consider initially the needs of the members of the staff. Teachers and day-care workers need support before they can begin to benefit from discussions focused on behavior of the infants and toddlers. Once having established a give-and-take relationship with staff members, it becomes possible to discuss problems of specific children. I remember a discussion about a mother and day-care staff member who were both exasperated because the three-year-old had soiled during his first morning in attendance. She emphasized the need for helping parents and teachers understand that under the stress of the new experience at

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the center, this behavior might have been predicted and should be considered normal.

As I review my years of pediatric practice I realize that my association with Dr. Provence enhanced tremendously my understanding of parents' concerns regarding behavior of their infants and children. I began to recognize basic competence in babies and toddlers as well as comprehend the interrelationships of the two generations. I also learned to emphasize what was "right" about a child and parent and to share this observation with parents and teachers. Careful recognition of these interrelationships during growth and maturation became an integral part of my daily tasks and provided enormous satisfaction in my daily responsibilities as a practicing pediatrician.

As I reflect on my associations with these three professionals during my years as a student, house officer, and junior colleague, I realize the tremendous influence they had as mentors during my formative years. Each helped me to become "what I wanted to be," which was a pediatrician able to maintain the health of children at as high a level as possible and to be supportive to members of both generations as they dealt with illnesses, injuries, stresses, and challenges in their lives. I derived enormous satisfaction in my years of primary pediatric practice largely because I had incorporated the knowledge and values of these teachers who were important mentors for me.

I believe it is imperative in the current scene of managed care, emphasizing profits and losses as a basis for treatment, that senior pediatricians maintain a strong advocacy role for supporting the needs of parents and children. The determination of what is appropriate care for patients must remain in professional hands and not be determined by third-party payers. The professors and senior practitioners should assume the responsibility as mentors so that students, house officers, and junior colleagues will learn to value human dignity as a cornerstone of good medical practice. I cannot imagine what my professional life would have been like had I not had the good fortune to experience these three professors as mentors.

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Retired Pediatrician Insists, 'Every Day I Need to Be Useful'

FRANCIS HELFRICK, M.D.

Francis W. Helfrick of Manchester was born on 13 January 1914, in Allensville in central Pennsylvania—Amish country. Although not Amish, he befriended his Amish neighbors and schoolmates, and "from a very early age I learned about the work ethic," he says.

I WAS thinking the other day about growing up with the Amish and realized what an effect this had had on me. Work was a survival tool for the Amish—working was a very important part of the community. We weren't Amish; my parents were active in the Protestant church, and we had a lot of church training.

When I went to college, Juniata College, I got my directions as far as my career. I became interested in biology and wanted to get into work that helped people. My brother was in medical school, and that combination directed me toward medical school, to Johns Hopkins University.

I interned in Philadelphia for a year, a rotating internship because I thought I was going to practice in Pennsylvania. But I didn't get as much pediatric training as I would have liked. I went back to Johns Hopkins for an internship and stayed on and was appointed assistant chief of pediatrics at Baltimore City Hospitals. I was director of the newborn nursery and the morning pediatric clinic and this involved a pediatric faculty appointment for Johns Hopkins Medical School. At the hospital, we also taught students at the University of Maryland Medical School.

There was no doubt in my mind that this was what I wanted to do. It was a very busy time; I essentially had two full-time jobs. It was during the war—everybody was very busy. Those left behind were very busy.

Pacifism and poverty.—I was a conscientious objector and had lots of hassles with the Selective Service system. I became acquainted with the Society of Friends and appreciated their wonderful spiritual attitude toward life; it was compatible with my pacifism. I joined the Society of Friends and have been a member ever since.

Getting mixed up with the Selective Service system was quite an experience. I was assigned to alternative service and, after a lot of maneuvering, ended up in Puerto Rico at a service camp operated by the Church of the Brethren. I had to take the medical exams for Puerto Rico and get a license to practice there.

We were located in the poorest area of the islands, which was one of the poorest areas of the world, and I confronted poverty in a way I would never have seen otherwise. The kind of poverty that we met there was different from what we tend to see here.

Many had lived in poverty for many generations; it was part of their culture. They developed coping skills. I also learned that if you are going to help poor people, you cannot denigrate their coping skills; you must never humiliate the person you are trying to help, I've found this very helpful in my thinking ever since.

I met my wife, Sylvia Merrill, in Baltimore—I was a resident; she was a medical student. We were married in a Friends meeting in Baltimore in 1943. She was from Weymouth, Massacusetts, near Boston. After a lot of searching, I found someone in Manchester, Connecticut who was moving to California and had a pediatric practice for sale. I came to Manchester and have been here ever since.

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FRANCIS W. HELFRICK, M.D., retired pediatrician, Manchester. Reprinted with permission from the *Hartford Courant*, Older Voices, stories of older state residents as told to Jane Gordon, 14 April 1997.

After my wife had six children, she went back to training and became a psychiatrist—she worked in several areas. She didn't have a private practice but worked in several clinics and at the bureau of disability under the Social Security Administration.

My wife and I enjoyed ourselves by going wilderness canoe camping in Minnesota and cross-country skiing, mostly around Connecticut. We did go to Vermont a couple of times to ski. The kids were grown up before we got into that. It's great fun to get outdoors in the wintertime, and cross-country doesn't require the downhill skills.

Healing spiritualism.—I practiced from 1948 to 1992; I had quite an active practice, had a lot going on. I was chief of pediatrics at Manchester Hospital for six to eight years and took my term as president of the hospital staff. I was head of the Connecticut State Pediatric Society, which at the time had the interesting title of the Hezekiah Beardsley Pediatric Club. I also was involved with the Connecticut State Medical Society and was chair of their committee on medicine and religion. We tried hard to persuade doctors that people's religious beliefs have much more to do with healing than the doctors thought. There was a lot of resistance to that.

We had to persuade doctors that it was not their religious beliefs but the patient's that might have a role in healing. Prayer can promote healing in people—I think that's a very interesting angle to healing. I have a deep respect for the role spirituality plays in all kinds of healing, and I think people need to be more cognizant of that.

I was also a member of the Hartford County Medical Society and a member of their ethics committee for awhile—four or five years. We addressed a great variety of things where patients complained about a doctor—fees, methods, treatments. At Manchester, I was very much interested in children's psychiatric needs and was instrumental in starting the Child Guidance Clinic in Manchester.

The Manchester Symphony Orchestra started in our living room in 1960. My wife and I were always interested in music—she played the violin and I played trombone, and she later took up viola. And we would have a group of people in our living room to play music. We decided to expand, and we knew we needed professional instruction. We turned to a local musical instructor in our town, and we started an orchestra. I played for 19 years as second trombone. My wife played violin and then viola until she became ill.

It's important to me—I think most communities have an enormous amount of talent that isn't used. There's a lot of talent in our community that we are not aware of. One of the things I've become involved in is the Manchester Arts Council; we just put out a brochure telling people what goes on in town and the importance of art in education and business. And I'm on the board of the symphony and chorale and one of their major fund-raisers.

Time to do more.—Then I retired in 1982. That was sort of a shock—I never though of retirement as a continuing vacation. It was a real turnaround. I suddenly realized that I depended more than I thought I did on people looking to me for advice. Suddenly that stopped—people no longer called me for advice or needed my opinion on anything! Probably it had become a part of my self-image. It was a shock!

But it was a matter of adjusting. Retirement has become a wonderful opportunity to be released from responsibility and to have more time to do things that I have never had enough time to do before. Not only is one released to do things in a less scheduled way, but retirement gives you a chance to review what you've done and what you want to do. Here's where that old ethic comes in—every day I need to be useful. At the end of every day I say, "What have I done to be useful?"

I'm now involved with the Family Friends group, which matches adults with children with illnesses or disabilities. I've come to know two beautiful children with AIDS and have gotten to know their remarkable foster families. I'm also a member of the Manchester Community Services Council, an umbrella group for social services in the area, and a member of the Transitional Living Center, a group home for adolescents in the area. And I do quite a bit of church work, being a member of the Friends Meeting in West Hartford.

One of my major hobbies is orchids. When my mother came to live with us 20 years ago, we built a screened-in porch and attached greenhouse because she loved to work with flowers and plants. Since her death, I've taken over the greenhouse, and it is now primarily a place where I grow orchids. They're very much like children; you must be tender with them, play music, compliment them when they do well. They've given me an enormous respect for beauty, an I think that beauty is something that can be part of our effort to overcome evil.

My wife and I celebrated our 50th anniversary in 1993 in Maine, at a place we used to vacation at near Penobscot Bay. It was that same year that Sylvia got her cancer. We went back to Baltimore to Johns Hopkins, where we first met—a whole recycling experience. During the course of her treatment there, we ended up in a little apartment that was almost in the exact spot that we had lived when we were first married. We were there about six months; we came back to Manchester, and she continued treatment at the Gray Center at Hartford Hospital, and she died at home under hospice care. She died on 29 September 1994.

I miss her very much.

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Commentaries

The Question of Assisted Suicide: Why Now?

Issues relating to the legality of physician-assisted suicide are now being presented and argued before the courts of justice. Why has this question arisen at this time in our society?

The primary reason stated for supporting such an approach to terminating life is to relieve suffering. This implies that current efforts to do that are increasingly unsuccessful and that the medical care system has somehow failed to provide adequate management and effective emotional and psychological help for those with intractable pain or near death from fatal illness.

It is argued that the right to die goes beyond an individual's decision to refuse medical care and to curtail supportive medical treatment in the form of respirators, intervenous fluids, tube feedings, etc. It is now claimed that the process of dying may legally be abetted by the direct participation of a medical practitioner. The doctor would plan and actively assist the evolution of death pharmacologically.

If assisted suicide is made an acceptable practice under the law, one of the major difficulties ahead will involve the development of rules and regulations governing who will qualify for it and how, when, and where it will be done and how it will be monitored. The fear exists, well supported by 20th-century history, that the *right to die* may be utilized for reasons other than a compassionate desire to relieve intractable suffering. The economic hardship surrounding prolonged lives in a society where productivity and the ability to provide for oneself are highly valued, is an incentive and a temptation to seek alternatives to longevity. There may develop a tendency to expand the meaning of *suffering* to include uselessness or total dependency in a secular, materialistic sense and use this wider definition as an excuse for disposing of those who fit that classification. The danger lies in the labeling applied to individuals and groups in our society and in the political perspectives and agendas of those with the power and position to influence such categorization.

The specter of future genocide looms ominously if this path is followed. The *rules* governing bureaus are most efficient when devoid of any compassion or concern for the individual as we witnessed during the Nazi era. As soon as the Nazi regime removed ethnic groups from the citizenship rolls, making them stateless, these people became disposable. Since there was no ability to expel them by mass emigration they were rounded up and transported to concentration camps. The gas chambers were built and the Holocaust took place with the complicity of the greater part of a German citizenry who were either unaware or remained silent out of fear. The actions of the SS under Himmler were devoid of any compassion, pity, or concern, for the men, women, and children that they were ordered to dispatch. The SS were following carefully documented rules and regulations to the letter. The marker of this "well run" bureaucracy was its unemotional devotion to implementation of its mandate and that mandate was to get rid of "undesirables."

If the right to assisted suicide is legalized in America, a bureaucracy will necessarily be instituted and given the responsibility to develop pertinent rules and regulations. If political control in our democracy should favor one group out of the many making up our country, there is the possibility that the horrors of the past could be repeated in the future. We don't seem to learn much from history. We continue to be naive about man's inhumanity to man. This naiveté is unjustified as we currently witness massive genocide taking place elsewhere in our world in Africa, Afghanistan, and the Balkans.

Instead of taking this potentially hazardous course, it may be wise to seek another alternative centered around providing adequate treatment for those with conditions in which suicide is now being considered as a way out of suffering.

As previously mentioned, one of the primary reasons that the question of assisted suicide has arisen concerns the claim that the medical care system has failed to manage chronic painful conditions or terminal illness effectively. This assertion may be warranted for two reasons.

1. Since the advent of the Harrison Act early in the 20th century, physicians have been subject to external controls and bureaucratic constraints regarding the use of medications designed to relieve pain and suffering. The narcotics authorities, chiefly the Drug Enforcement Administration (DEA), look askance at the prescribing of drugs of the opioid class especially when the amount of the drug is increased to levels necessary to overcome physiological tolerance. Tolerance to drugs such as morphine, codeine, and heroin commonly occurs when these drugs are consumed regularly. Larger and more frequent doses are required to produce a clinical effect. Here is where many medical colleagues plus the bureaucracy seem to stumble.

Because of fear of the DEA and the state medical licensing authorities, physicians are cautious and often reluctant about prescribing opioids at more frequent inter-

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vals and in larger and larger amounts. The threat of bureaucratic oversight and reprisal has resulted in a tendency to underprescribe pain medication for those who need it most. This failure to treat painful and/or terminal conditions with efficacy must be considered a major factor for the development of assisted suicide as a desirable option for the relief of suffering.

Hospice care for the terminally ill includes adequate pain and anxiety relief. This diligence in providing control of discomfort is permitted without constraint or reservation. The *attitudes* of those in attendance are supportive of giving patients what ever it takes to produce comfort. Generally this is for the short term, as those in hospice have a grave prognosis and the length of life in that treatment environment is limited.

Why cannot the individual medical practitioner provide this same level of care on a private basis in the comfort of the patient's home without arousing the suspicions of pharmaceutical providers, the state medical board, and the Drug Enforcement Agency (DEA)? Why cannot the individual with a chronic painful condition readily obtain what is needed to maintain a comfortable existence? This brings us to the second reason for the failure to provide adequate treatment for pain.

2. Many physicians are addictophobic.[1] This phobia impairs rational consideration and decision making regarding issues related to drugs capable of inducing dependence. Users of opioid drugs in increasing dosage to tolerance for chronic painful conditions are often viewed with suspicion, disdain, and hostility. In many instances these feelings may be justified by the actions and behaviors of these "pseudoaddicts" whose inadequate or curtailed treatment induces them to seek drugs through the medical care system by scamming, lying, and conning—doctor shopping. The narcotic bureaucracy may take a dim view of long-term provision of opioids especially if the frequency and levels of dosage increases with tolerance. Failure to understand the biochemistry of opioids in this respect results in suspicion and misinterpretation which, unfortunately, may result in harm to both patient and treating physician. If a painful clinical condition is properly documented, unrestricted opioid use should not be viewed as an aberrant or unprofessional act.

For many years I have asked that the Connecticut General Assembly, and, recently, the Fairfield County Medical Association to support the enactment of legislation allowing unrestricted treatment of chronic pain modeled after an existing California statute. This would allow sufferers from chronic pain to obtain unrestricted relief and protect them and their treating physicians from reprisal by the drug authorities (see box on this page). Efforts to obtain support for this agenda have failed, even after amending the resolution to the provision of physician education regarding the treatment of chronic pain.

In the face of developing support for assisted suicide and in view of the dangers of such a course, it is time for the AMA and state, county, and local medical associations to explore alternatives to present restrictive bureaucratic policies for opioid use, and to insist that the rationale for prescribing and levels of use of these agents be based solely on clinical indications.

Subject: Treatment of Patients With Intractable Pain

Submitted by: Henry N. Blansfield, M.D.

Whereas, the prescribing, furnishing, or administering of increasingly large amounts of drugs of the opioid class, heretofore, has been considered unprofessional conduct on the part of licensed physicians and a reason for investigation and disciplinary action against them;

Whereas there has been recent criticism in the medical literature directed at medical practitioners for failing to provide adequate pain control for those who are terminally ill or who have intractably painful chronic illnesses;

Whereas, it is a primary responsibility of the medical profession to allay suffering and to do so with medications of proven reliability and safety;

Whereas, physicians and surgeons are reluctant to use opioid drugs liberally for pain control because of attitudes by practitioners, the professional licensing and quality control authorities, and the narcotic agencies that confuse the phenomenon of tolerance to opioid drugs with abuse of these agents;

Therefore be it resolved that the Connecticut State Medical Society, together with interested County Medical Associations, shall embark upon a campaign to help further educate the physicians of Connecticut in the most current therapeutic management techniques in the control of intractable pain which shall include but not be limited to prescribing or administering controlled substances. Items such as outcome studies, efficacy, patient safety, tolerance to medication, dosage, cost, side effects, and proper record keeping and storage of controlled substances shall be a part of the education program.

Fiscal Note: To be determined by the Council. Support may be available from pharmaceutical companies, foundations, etc.

Henry N. Blansfield, M.D.
Danbury

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[1] Blansfield, HN: Addictophobia, Editorial, *Conn Med* 1991; 95-6.

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Physicians Take Collective Responsibility for Care

Gag rules, clauses that prohibit physicians from discussing expensive treatment options with patients, are important symptoms of the profit-before-patient approach of managed care.

The public needs to appreciate that insurance companies are forcing our nurses and doctors to ration health care by denying services and restricting referrals.

There is a move to abandon traditional medicine that focuses concern on whatever-it-takes to make a certain patient well, in favor of "population medicine" that advocates minimizing care for the sake of the greatest good for the greatest number of people within certain monetary limits.

They reason it is more important to vaccinate a thousand children than to put an elderly diabetic on a renal dialysis machine. We should be able to do both.

Perhaps it all began when these insurance companies, once content quietly to make a comfortable profit, became intent on making as much as they could. To protect themselves, they built a powerful lobbying organization.

Sound legislation, introduced last year to protect the people of Connecticut and to defend the standards of our medical care, was blocked by Governor Rowland, who seems to be on the insurance companies' side. Although more than 90% of our legislators favored this bill, it died in the Senate.

Physicians who have testified before General Assembly committees this year have emerged with the discouraging sense that legislators are far more concerned about the viability of our state's health maintenance organizations than the viability of their constituents.

Legislation adopted last year to assure new mothers two days in the hospital was nothing but a pacifier, leaving more widespread abuses unchecked.

Rather than address problems on a case-by-case basis, a comprehensive examination of the entire managed-care industry is required.

HMOs have succeeded in driving costs down to the point where 40% of the nation's 660 HMOs are now losing money. As a result, the smaller ones are being gobbled up by the larger ones for millions of dollars—money that otherwise would be spent on medical care and research.

It is one thing to deny coverage for crutches and splints, but what about MRIs, surgery, or new antibiotics?

A week doesn't go by when our medical decisions are not challenged by some clerk who sits by the phone with a clipboard. One of the largest HMOs in Connecticut just cut all its doctors' fees 20% in order to make its quarterly earnings look better. Then it declared a 12% increase in premiums. Since when does Wall Street deserve a lion's share of our health resources?

Employers are not doctors and have difficulty monitoring the quality of the insurance offered their employees. Seduced by low premiums, most employees don't realize their contracts are inadequate and deceptive until they require services.

Doctors' groups called "independent physician associations" were formed to negotiate with HMOs and to monitor standards of care. They are expensive and time-consuming organizations that are usually sponsored by the HMO. That's why doctors have been so ineffective in trying to control the rapid growth of abuse.

Medical groups like the American Medical Association and state medical societies are perceived to represent exclusively general practitioners (70% of their ranks),* who have often been favored by managed care's new list of priorities. General practitioners have become the gatekeepers; and their incomes reflect how much money they've saved the HMO, rather than the quality and quantity of medicine dispensed.

What, then, can doctors do when they are morally and ethically bound to provide optimal care and to place the patient first?

Doctors are ultimately held responsible for decisions made by these nonpractitioners. Because the HMOs turn a deaf ear to physicians' appeals for new methods of treatment—as well as for fair handling of the credentialing, termination, and reimbursement of participating physicians—many doctors feel they should be recognized by the National Labor Relations Board and should seek redress for unfair employment practices.

The U.S. Justice Department, which enforces antitrust laws, believes physicians are different from, say, hospital housekeeping employees or even nurses; physicians control and supervise their own work.

Although the law is very clear that physicians may not bargain collectively, there is a loophole which permits organizations like unions to bargain for each of them individually as a "messenger."

Jack Seddon, the executive director of the Federation of Physicians and Dentists, affiliated with the AFL-CIO, recently came to Danbury to promote this rapidly growing network (2,500 members so far). He emphasized that the Medical Practices Act and Professional Code of Ethics strickly prohibits doctors from participating in a strike. But through public awareness, proactive litigation, and proactive legislation, physicians may yet regain control.

The union can advise physicians in reviewing HMO contracts determining what is truly the "usual and customary fee" for service, and disciplining HMOs through the "messenger" model.

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*In Connecticut 8.6% of the membership of the Connecticut State Medical Society are family practitioners or general practitioners.—Ed.

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Acceptance among physicians has been cautious. Some fear the consequences of antitrust litigation, others the perception that union brotherhood is in some way "unprofessional" and demeans their high calling.

Nevertheless, unless HMOs show some restraint, physicians who are unable to meet their overhead will be forced to enroll. Already specialists who have been hardest hit by managed care—such as orthopedic surgeons—have started to weave the fabric of solidarity.

They are hopeful that as the creeks join to form streams, there will mount a roaring river of protest that will eventually ensure responsible care for patients, and indemnify the traditional doctor-patient relationship for the foreseeable future.

Dr. Ronald A. Ripps
Danbury Orthopedic Surgeon

Who Is Minding the Store?

The 1990s have witnessed an impressive increase in the cadre of physicians involved with managerial and business-oriented pursuits. The emergence of large IPAs, PHOs, physician-controlled malpractice companies, and physician-owned managed-care organizations has created an expanded role for physician managers whose role is to deal with questions of contracting, organizational finance, personnel, and the myriad of issues facing a large business organization. The number of physicians entering MBA programs is rapidly rising and the American College of Physician Executives now has a membership of over 12,000. Physician executives are playing an ever increasing role in shaping health-care policy. For example, in the 1980s the hospital chiefs of staff had limited capacity to involve themselves in the institution's business plan. Their scope of activity was limited to a narrow range of medical staff issues such as credentialing and reappointment. Long range planning and budgeting was the province of the hospital administration. Within the past several years however, this role has changed; the chief of staff is now often given an administrative title such as Senior Vice President for Medical Affairs, a role that requires significant interaction with senior management and allows for major involvement in hospital governance. In a similar vein, the president of a large IPA or PHO must devote countless hours to ensure that the organization remains focused, innovative, and financially viable in today's highly competitive environment.

This trend toward increased physician participation in administrative activities is one which must continue if practitioners of medicine are to have any chance of succeeding with their agenda of providing high quality health care to the public amidst a business culture in which the "bottom line" plays the dominant role in determining health-care policy. Unfortunately, there are forces at work which may reduce the influence that physician managers can have on the present system. It is ironic that perhaps the most vocal and effective detractors of physician leadership are physicians themselves.

The means by which the medical community reduces the effectiveness of physician managers are varied. Most common is the often-repeated allegation that the physician administrator is not a true representative of practicing physicians. Many doctors believe that only an individual who spends the entire day seeing patients in an office can truly and effectively represent the medical profession in negotiations. Physicians who work less than full time in clinical practice become suspect; it appears that their colleagues believe that practice is an all-or-nothing phenomenon. The physicians practicing part time are, they feel, less able to understand the exigencies of practice than their full-time practicing colleagues. By openly denigrating the physician administrator who serves as their representative in negotiations, they weaken that individual's credibility with his or her corporate counterparts, and make it far easier for corporate management to disregard the views and demands of the involved physician. It is hard to fault the managed-care organizations in this regard. It is difficult to take a physician representative seriously when those he or she represents deny the validity of their negotiator.

Another impediment to physician administrators is the refusal of many of their colleagues to incorporate the many hours spent in administrative duties into the financial and work schedule of a practice. An example of this problem would be an IPA president or PHO board member who is required to spend several afternoons and nights each week at meetings concerned with IPA or PHO contracting. If this individual is unable to count administrative time toward meeting the clinical practice obligations of the medical group, it is possible that personal time and financial remuneration might be reduced to such unacceptable levels that the involved physician would find his or her administrative role untenable. It would be wonderful if administrative time could be appropriately compensated. However, physician-run organizations are not frequently awash with money, and the chances that this situation will improve significantly in the near future are not good.

Physicians must support the efforts of those among them who are willing to take on administrative roles. Participation in all aspects of hospital and managed-care business must be encouraged. We must be vocal in our support of our physician colleagues' efforts and seek ways to acknowledge the time they devote to this nonclinical work. Managed-care organizations and government officials must be given the opportunity to deal with individuals who have the support of the physicians they represent.

HEALTH SCIENCES AND

Negotiating with acknowledged physician representatives will clearly encourage a more effective dialogue and produce more satisfactory results. The alternative to this plan of action is to pay administrators to provide this leadership function. We in Connecticut have had more than enough examples of this alternative to know that it is a poor option at best. Our goal should be a system in which it is the physician executive, not the business executive "who is minding the store."

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The Changing Female/Male Incidence of Thyroid Carcinoma in Connecticut

Zheng and coworkers, utilizing information from the Connecticut tumor registry, analyzed the incidence of thyroid cancer (in both males and females) within this state during the period 1935–92.[1] Their report, because of the 58 years surveyed and the large number of patients involved, permits a further assay. Hence, this commentary on the female/male ratio of cases with thyroid carcinoma, and our appreciation to Zheng and associates for the compilation.

The higher incidence of thyroid carcinoma in females has been well recognized in most parts of the world. However, the trend of the ratio (female incidence/male incidence) is less readily available in most reports. This ratio can be calculated from the tabular material presented by Zheng and associates. To do this, we assign a number to each time period. For example, 1935–39 is period one, and so on up to 1985–89 as period 11. The last time grouping (number 12) consists of only three years, 1990–92. The relationship between the incidence of thyroid cancer (C), in cases per 100,000 population and the time period (T), turns out to be remarkably linear. For females, the incidence per 100,000 population was:

$$C = 0.84 + 0.40\ T \qquad [1]$$

The correlation coefficient for this equation was over 0.97, with a P value of < 0.001. For males, the relationship was:

$$C = 0.16 + 0.21\ T \qquad [2]$$

The correlation coefficient was also over 0.97 ($P < 0.001$). Shown in the figure are the data points for both sexes.

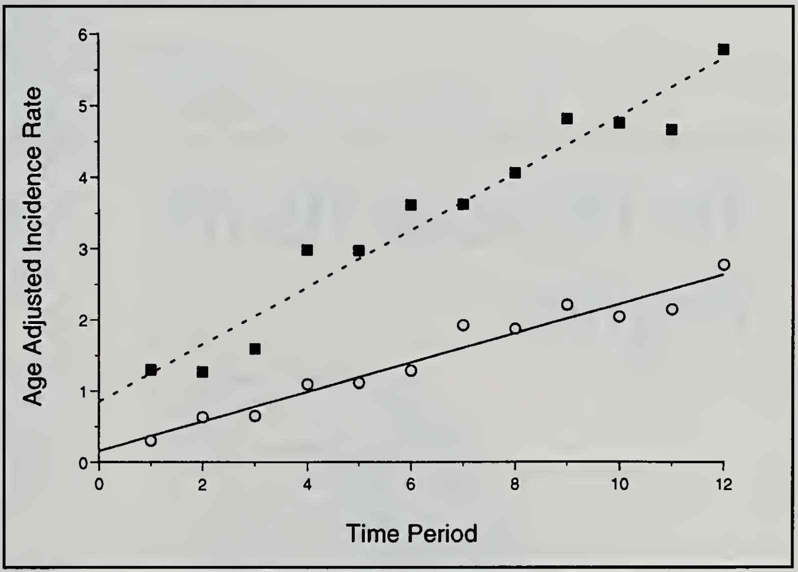
It may be noted that the two equations have different slopes, and hence the lines are diverging. The (female–male) incidence is the difference between equations [1] and [2].

$$C\ (\text{female–male}) = 0.68 + 0.19\ T \qquad [3]$$

The ratio (R) of the two incidences is:

$$R = (0.84 + 0.40\ T) / (0.16 + 0.21\ T) \qquad [4]$$

At time period 1 (1935–39), the female / male ratio of incidence was predicted by the equation to be 3.35 (slightly below the actual ratio, but a total of only 60 cases were involved). At time period 12 (1990–92), the predicted ratio was 2.10 (*vs* 2.09 actual). Thus, Zheng and associates have provided data that might be used to compare the Connecticut experience with that of other populations. Zheng and coworkers postulated that the increased incidence of thyroid cancer was related to radiation treatment of benign head and neck disorders in children during 1920–50.[1] If that is correct, then the incidence should decrease after the involved cohorts pass on and the "non-radiated" population ages. The availability of quantitative expressions should allow this to be tested over time.



Figure—A plot of the female (top line) and male (bottom line) incidence/100,000 population of thyroid cancer in Connecticut. Time period 1 was 1935–39. Each subsequent grouping was also five years, except for time period 12 (1990–92).

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Editorial

The Abuse of Procedures

In this issue of *Connecticut Medicine* Waters and Kieran have addressed one aspect of a growing problem in American medicine, the overuse of procedures, the pervasive drive to employ technology simply because it is there. Everyone seems to recognize the pernicious effects in harm to patients and the increasing costs to all of us; no one seems to know quite how to go about doing something about it.

This commentary on the use and abuse of cardiovascular procedures is both timely and well presented. The authors are to be congratulated on the succinct presentation of a complex and controversial area of medical care in the United States. Although their paper addresses the field of cardiology in particular, most of their concerns could be extended to other areas of medical care in a capitalistic, increasingly commercialized system where "managed care" has only served to increase the complexity of the equation, both for the patient and the caregiver, without controlling costs or improving care to any significant degree. As the theorists are all too quick to point out, abuse is inherent in the system, and as soon as capitation is substituted as a payment plan, costs will assuredly go down remarkably, and all abuses will stop.

The authors have addressed the issues of quality and quantity in a high tech environment such as the cardiac catheterization laboratory. Common sense is hard to refute in this area, even when some of the data may be challenged. Common sense and everyday experience says that the more procedures one does, the better one becomes at doing them. Let us assume that the inept are weeded out early in a large medical center by the very fact that they are under day-in and day-out scrutiny by a large number of colleagues and peers. Let us also assume that this can never be as true at a small institution unless it is closely allied to a larger one and the staffs interact on a daily basis. The opportunities for both abuse and poor practice are inversely related to the number of highly skilled practitioners working in close association. Granted there are exceptions; a single highly qualified individual can make a small service as excellent as a larger one, but good results in medicine are almost always the product of a skilled team working with equally skilled support services. This combination is asking a lot for a small community facility, or in any low volume setting.

There seems little reason to debate the reliability of the low volume/poor outcome figures which the authors have quoted and which are repeated over and over in every study that includes adequate numbers of patients for statistical reliability.

Rather the debate comes even further down the line to another issue. Dr. Waters knows from his personal experience just how well the large center serving a specific geographic region works from the point of view of clinical outcomes. But the United States would have to rethink the concept of medical care in a major way before any such system of centers of excellence could be entertained, much less acted upon throughout the nation. As the authors point out, financial incentives must be removed from cardiologist who refers the patient for angiography and related cardiac studies.

It is hard to understand why this has not already been recognized by the HMOs who must foot the bill both for unnecessary procedures and poor outcomes. The authors have not been reticent to point out this troublesome aspects of cardiac care in a complex, highly technical medical environment when appropriate and inappropriate incentives may become incredibly confused.

P.W.

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Additional prescription to persons in the same family, each	$ .50 to $ 1.00
Detention after 1st hour, each	$ .50 to $ 1.00
Traveling Fee, for each mile after the first (In case of visits by railroad the milage may be reckoned according to the time saved the practitioner)	$ .50
Consultation Fee, double the usual charge.	
Visit at night, (from 9 p.m. to 7 a.m.) double the usual fee.	
Detention during night	$ 5.00 to $10.00
Obstetrical Fee	$ 8.00 to $15.00
(It being understood that in cases of extra attention or difficulty, any physician may charge according to discretion.)	
All visits, after the first subsequent visit, are to be charged at the usual rates.	
Consultation Fee, in obstetrics	$ 5.00 to $10.00
Dressing Wound	$ 1.00 to $ 5.00
Leeching or capping, each	$ 1.00 to $ 2.00
Inserting seton, or making issue, each	$ 1.00 to $ 2.00
Extracting teeth, at office, each	$ 1.00 to $ 2.00
Opening abscess	$ .50 to $ 1.00
Vaccination	$ .50 to $ 1.00
Venesection	$ 1.00
Introducing catheter, first time	$ 2.00
Each subsequent time	$ 1.00
Reducing dislocations	$ 5.00 to $20.00
Removing tumors	$ 5.00 to $50.00
Reducing simple fracture	$ 5.00 to $15.00
Reducing compound fracture	$10.00 to $20.00
Dressing fracture, subsequent	$ 1.00 to $ 3.00
Gonorrhea, ($5 always in advance).	
Syphillis, ($10 always in advance).	

Subsequent fees at usual rates.	
Paracentesis thoracic, *vel abdominis*	$ 5.00 to $ 3.00
Reducing hernis	$ 5.00 to $10.00
Tapping for hydrocele	$ 3.00 to $ 5.00
Operating for radical cure of hydrocele	$10.00 to $20.00
Amputating finger or toe	$ 5.00 to $10.00
limb	$20.00 to $50.00
testis	$20.00 to $30.00
tonsil	$ 5.00 to $10.00
mamma	$25.00 to $50.00
Operating for hare-lip	$10.00 to $30.00
hernia	$25.00 to $50.00
fistula in ano	$15.00 to $55.00
fistula lachrymalis	$15.00
cataract, or aneurism, each	$25.00
Tracheotomy	$20.00 to $40.00
Trephining	$20.00 to $50.00
Phymosis and Paraphymosis	$ 5.00 to $10.00
Using probang	$ 3.00 to $ 5.00
Using stomach pump	$ 5.00 to $10.00
Introducing pessary	$ 2.00 to $ 5.00
Examination by speculum	$ 2.00 to $ 5.00
Administration of anesthetics	$ 2.00 to $ 3.00
Letter of advice	$ 2.00 to $ 5.00
Minute physical examination	$ 5.00 to $10.00
Examination for life insurance	$ 3.00
Examination and certificate of insanity	$ 5.00 to $10.00
Opinion on questions of Medical Jurisprudence	$ 5.00 to $10.00
Critical examination of urine	$ 2.00 to $ 5.00
Small pox, double the usual fee	
Post mortem examination, when made by request of public authority	$10.00 to $15.00
Post mortem examination, when made by request of friends	$10.00
Post mortem examination, when made after interment, double these rates	
Extra—professional services: such as attending Court	

HEALTH SCIENCES AND

50 Years Ago
From *The Connecticut State Medical Journal*
May 1947

Lobotomy in Connecticut

The last meeting of the Connecticut Society of Neurology and Psychiatry, held at the Fairfield State Hospital on March 20, 1947, was devoted to a discussion of prefrontal lobotomy. Dr. Burness E. Moore, assistant professor of psychiatry at the Yale University School of Medicine, gave a report summarizing the results achieved by this procedure in five psychiatric hospitals within the State. Dr. Samuel Friedman, clinical director of the Fairfield State Hospital, discussed the experience of the Fairfield State Hospital group with lobotomy patients. Dr. Jane Oltman presented several patients who demonstrated the striking benefit brought about by the operation. Dr. Bernard S. Brody, assistant clinical professor of surgery at Yale and neurosurgeon at the Fairfield State Hospital, presented a paper discussing the history of lobotomy and showed lantern slides and colored movies demonstrating the procedure.

The operation of prefrontal lobotomy for mental disorders was begun on an extensive scale at the Fairfield State Hospital in May of 1946. At the same time, plans were underway to begin the procedure at the Connecticut State Hospital, the Norwich State Hospital, and at the Institute of Human Relations at Yale, but shortage of equipment and personnel delayed the start of the program at these hospitals.

In the latter part of the summer, a meeting was held at the Connecticut State Hospital to organize a program of cooperative study and research. A Lobotomy Committee, consisting of the clinical directors of the State Hospitals, the physician-in-charge of the Yale Psychiatric Inpatient Clinic and a representative of the Institute of Living, was formed to plan a program. Several meetings were held at which it was agreed that each hospital would provide certain common data upon all patients, and a central registry of cases was established. The report of Dr. Moore at Fairfield was a result of this cooperative project. Data are now available on 125 patients who have had the operation. The preliminary report given at Fairfield covered 110 patients who had been followed for a minimum of one month postoperative. Forty per cent of the patients were much improved, 42 per cent were improved, 11.8 per cent unimproved or worse, and 6.3 per cent had died (in only four instances as a result of the operation).

A more detailed analysis of 88 patients was possible, of whom 68 were schizophrenic patients, 43 sick for over five years and 29 hospitalized over five years. Fourteen of the 68 patients were much improved and 45 improved; six were unimproved and three died. This is a comparatively good result for patients of such chronic and otherwise hopeless mental illness.

Of importance in the Committee's report is the fact that there was a significant difference in the improvement of patients who had been ill and hospitalized over five years as compared to those sick for a shorter period of time. Although it is apparent that patients may still improve even after hospitalization for as long as five years, it would seem that schizophrenic patients with an unfavorable prognosis and poor response to other types of therapy should be submitted to the procedure earlier in the course of their illness in order to obtain best results.

Perhaps more important than the actual results achieved in this group of 110 patients is the promise afforded by a relatively new and aggressive form of treatment for mental conditions that have been therapeutically intractable heretofore. A hopeful sign is the evidence of cooperation between the state hospitals and private psychiatric institutions within the state in the attack upon this problem. This is a new and progressive step which may lead to mutual stimulation and fruitful results in other fields as well as lobotomy.

(continued on next page)

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Reprinted from the *Connecticut State Medical Journal*, May 1947.

HEALTH SCIENCES AND

The Blue Cross Needs Change

Under this title, Gordon Davis, of Michigan, public relations consultant, writes in *the Modern Hospital* for January. Mr. Davis criticizes methods of payment to hospitals, high salaries of Blue Cross directors, and "preoccupation with ornaments rather than fundamentals (which) already has led in some instances to effort to repair the roof while the foundation has collapsed." "There was a time," he writes, "when Blue Cross executives could console themselves by saying that, bad as Blue Cross might be in some individual instances, it still was better than anything else in the field." However, regular "insurance is beginning to develop policies that offer true competition ..." Commercial insurance companies are now writing extended coverage that includes life insurance, and health and accident compensation for subscribers, plus hospitalization and medical and surgical fees for both subscriber and his dependents. Concerning hospitals and plan relationships, Davis observes, "It should become apparent that no payment method can survive unless it is acceptable not simply to a good majority of the hospitals but *all* of them. The situation which places hospitals and plans on opposite sides of the bargaining table is an unhappy one at best." Further criticism states, "I am beginning to question whether Blue Cross plans are sufficiently sensitive to the wants of the public. Within Blue Cross there has been a certain evangelical zeal which, in at least some of its major characteristics, is indistinguishable from that of the several planners who would saddle us with compulsory governmental health insurance."

Hello to the Gram

The editorial *Goodbye to the Grain,* published on page 485 of the December *Journal of the Medical Society of New Jersey,* has called forth comment from E. Fullerton Cook, chairman of the Committee on Revision of the Pharmacopoeia of the United States. Mr. Cook makes the following remarks:

"I appreciate your feeling about losing an old friend, but I am convinced that those who have grown up with the 'grain' and are really willing to try to learn and use the metric system will soon find it a great advantage.

"Those who think metrically will prescribe 5 cc. (not 4 cc.) for the condition calling for 'about a teaspoonful dose,' and then their calculations for the 100 cc. prescription will be easy and they will see that they have twenty doses or enough medicine, three times a day, for a week (less one dose).

"When one thinks of 4 cc. as the dose, one is being influenced by the old system and the thought of a drachm and a teaspoonful as being the same. We should forget the drachm. As a matter of fact, the modern teaspoon, available in a home, is much more likely to be 5 cc. than 4 cc.

"I hope that you will help establish the metric dose and not discourage it. At best it will take years to make it universal. I believe it was Osler who said that most men after 40 won't learn."

Physically Challenged Golf Association

The Physically Challenged Golf Association was established in 1995 with the mission to promote the game of golf to the physically challenged (*ie*, those afflicted by stroke, amputation, total joint replacement, neck or back surgery, musculo-skeletal diseases, etc.) The association recently received nonprofit status and has been endorsed by the Connecticut State Medical Society—Sports Medicine, Connecticut PGA, and the National Amputee Golf Association. With the help of the Connecticut PGA several clinics are being conducted. Help is needed at any of the clinics. Please call Kathleen Hickey Kane, MS., PT., ATC, for more information at the Connecticut Chapter of the Physically Challenged Golf Association at (860) 828-6446 or write P.O. Box 27, East Berlin, Connecticut.

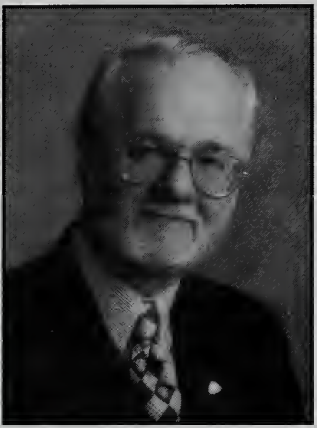
TPC at River Highlands
Cromwell, Connecticut
Golf clinic: 24 May 1997—1-4 p.m.

Hop Meadow Country Club
Simsbury, Connecticut
Golf clinic: 28 June 1997—3-6 p.m.

Clinton Country Club
Clinton, Connecticut
Golf clinic: 2 August 1997—3-6 p.m.

Racebrook Country Club
Orange, Connecticut
Nine holes/golf clinic: 4 October 1997—2:30 p.m.

The Doctors' Trial



It's what we learn after we know it all that counts.
Harry Truman

Most young physicians today know very little about German doctors and their involvement in Nazi atrocities. Their impression is that physicians were minimally, if at all, involved and that human experimentation in Hitler's Germany was done not by educated physicians, but by those who were laboratory technicians or others who wanted to be doctors. Many American physicians feel that complicity by their German colleagues was minimal.

Unfortunately, nothing could be further from the truth, as explained in the 27 November 1996 issue of the *Journal of the American Medical Association* (*JAMA*). This issue of *JAMA* commemorates the 50th anniversary of the Nuremberg Doctors' Trial and is a thought-provoking piece of medical journalism, extremely well documented.

There were many groups tried at Nuremberg, the most famous of which was Nazi party leaders such as Herman Goering, but lawyers, judges, physicians, and others were also tried for complicity in Hitler's terrorism and for crimes against humanity. Physicians were not immune from prosecution and punishment for involvement in Nazi atrocities.

The Doctors' Trial of 1946 was the first of the 12 different trials held at Nuremberg by the U.S. Army under Articles of International Law. There were 23 defendants, 20 of whom were physicians. Sixteen were found guilty, seven were acquitted, seven were executed for their crimes, and the remaining received prison sentences.

Physician involvement in death camps, torture, and unethical human experimentation began at the start of Hitler's rise. "In 1933, when the National Socialist Party came to power in Germany, the biomedical enterprise in that country was among the most sophisticated in the world."[1] "Physicians joined the Nazi Party not only earlier but in greater numbers than any other professional group. By 1937 physicians were represented in the *Schutz - Staffel* (SS) seven times more frequently than the average for the employed male population."[2]

The Nazi Party promised much and gave much to some doctors. "As Jewish physicians were disenfranchised, professional opportunities for non-Jewish physicians opened up and were seized avidly."[3]

Physicians engaged in infamous prisoner experiments too gruesome to describe here. However, "Beyond the experiments at Auschwitz, Nazi physicians presided over the murder of most of the one million victims of the camp. They performed selections, supervised the killing in the gas chambers, and decided when the victims were dead. They sent to the gas chambers inmates with a variety of infectious diseases. They supervised and at times carried out direct killing of debilitated inmates on the medical blocks by means of lethal injections into the bloodstream. Nazi physicians consulted actively on how to keep selections running smoothly, on how many people to permit to remain alive to fill the slave labor requirements at Auschwitz, and how to burn the enormous numbers of bodies in the crematoria. In short, the medical profession served not only as an instrument of Nazi mass murder but was involved in the ideological theorizing and in the planning, initiation, administration, and operation of the killing programs."[4]

When one reviews the history of the Doctors' Trial and physician involvement and complicity in the aberration of the National Socialist German Workers' or Nazi Party, one can see that physicians sadly and unfortunately were no different from any other group, although many of us would like to think otherwise. Doctors should have been better, should have known better, should have had a higher ethical standard. Sadly, the facts indicate differently.

Most people associate physician involvement in human experimentation, eugenics, and euthanasia with Josef Mengele, the doctor at the death camp at Auschwitz, but Mengele had numerous accomplices who were his equal in murder, torture, sterilization, racial purification, and genocide. "The SS doctor did no direct medical work. His primary function was to carry out Auschwitz's Institutional program of medicalized genocide."[5] Vivian Spitz was a young American court reporter during the Nuremberg trial who felt she could understand what Nazi political and military leaders had done, but she was uncertain and curious to learn about the doctors, who they were and what and why they did what they did. She was an eyewitness to the Trial and could not understand how or why doctors who had taken the

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Oath of Hippocrates to save and cure, had become murderers who exhibited no remorse for their "noble" work for their Fatherland. They denied wrong doing and felt they were innocent. They had placed the work of the state, racial purification, and duty ahead of the patient, ahead of humanity, and ahead of their profession, its oaths and ethics. National organized medicine worked to kill people, without significant protest from society in general and physicians specifically.

One of the difficulties for the prosecution during the Trial was the lack of a universally known and explicit standard for medical experimentation. As a direct consequence of the Doctors' Trial, the Nuremberg Code was promulgated. This Code set forth 10 principles to be followed when engaging in human medical experimentation. These included the requirement that patient welfare supersedes any research protocol and that the patient must be fully informed of the procedure and may stop the experiment at anytime. It contained and codified principles of informed consent, minimal risk, patient autonomy, and supremacy.

Unfortunately, the lessons of the Doctors' Trial and the principles advocated in the Nuremberg Code, which were expanded in the Declaration of Helsinki, have been rapidly and continually forgotten. Have we really learned?

Many articles are now being written about the future of medicine, especially and appropriately so in light of the volcanic changes brought about by managed care and the anticipation of the Third Millennium. Before looking to the future and prophetizing, we should first look back, since those who forget history will be condemned to repeat it. There is no greater past evil on the part of the medical profession than its involvement in the Holocaust. It is something all should study and remember so that this chapter in medical history is not repeated. By constantly remembering and studying our past, we hope mistakes like this will not be repeated.

It has been said that this is the Century of Genocide. The most egregious and horrific example is the Holocaust, but there are other recent examples in countries such as Cambodia, Bosnia, Ethiopia, and Rwanda.

Genocide is not something which only occurred in foreign countries and distant continents. Genocide was attempted here in Connecticut, albeit in a small way compared to the horrors of the Holocaust, when in 1637 Captains John Mason and John Underhill led a group of English colonists and their Indian allies in an attack on the Pequot settlement at Fort Hill in Mystic. These troops mercilessly slaughtered between 300 and 700 men, women, and children in an attempt "to cut off the remembrance of them from the earth." Those that escaped were hunted down and slaughtered, executed, or given to other Indian tribes as slaves.[6] The Pequots of Connecticut were the first Native American group to be "terminated" to make room for English settlers. Connecticut has the dubious distinction of being the first to attempt annihilation of an entire Native American tribe. The Pequot War of 1637 ended in September 1638 with the Treaty of Hartford and was a turning point in our colonial history since the opportunity for peaceful coexistence between indigenous peoples and European settlers was lost. It set the tone for our future western expansion.

There is no reason to think that genocide and atrocities against humanity will not again occur here. As has been said, it is not surprising that the Holocaust occurred. It is surprising that it does not occur more often.

Medical history, medical ethics, and the social responsibilities of health professionals are woefully undertaught in medical schools. It has to be learned and relearned almost daily as we continue in our everyday care of patients. Medicine's Code of Ethics, if consistently and universally adhered to, will save the medical profession, save it from involvement in genocide, save it from destroying the patient-doctor relationship, and save it from changing from a profession dedicated to the patient to a profession dedicated to something else such as the state, a political ideology, or a business.

The changes now occurring in the provision of medical care will make it easier for doctors to turn away from the goals of the Hippocratic Oath and our Medical Code of Ethics—one small step at a time. Recalling the past events of physician involvement in the Holocaust cannot help but give us all pause and to reflect on what we are doing.

Dr. Romana Strochlitz Primus, a New London pediatrician specializing in allergy and clinical immunology, is the daughter of a Holocaust survivor. She is also a founder of the International Network of Children of Jewish Holocaust Survivors and a member of the U.S. Holocaust Memorial Council. Dr. Primus comments that, "There is a very disproportionate number of Holocaust survivors and their children who are caregivers and social workers. If that's what the Holocaust has done, that's wonderful."[7] If all physicians reflect on past tragedies and determine they never be repeated, that would be wonderful, too.

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HEALTH SCIENCES AND

REFLECTIONS ON MEDICINE

Medicine: Are We on the Threshhold of Another Golden Age?

ROBERT U. MASSEY, M.D.

FORTY-FIVE years ago when I was studying for the Boards in medicine, the received wisdom had been to read (and if possible memorize) the *Year Book of Medicine* and all the editorials in the *Annals of Internal Medicine*, in addition, of course, to knowing backward and forward your Cecil and Loeb *Textbook of Medicine*. Mine was the 1951 edition, already out of date. But that could be compensated for by reading the *Year Book*.

I recently thumbed through the 1951 *Year Book of Medicine* whose editors were a distinguished crowd indeed: Paul B. Beeson, J. Burns Amberson, William B. Castle, Tinsley R. Harrison, and George B. Eusterman. The important clinical news was the recognition of bacterial resistance to antibiotics. Beeson comments, " ... an unsettling discussion. One wonders what place penicillin, aureomycin, *et al.* will have 10 years from now." The role of ACTH and cortisone in infection seemed confusing. A group at the Mayo Clinic found what they thought was a beneficial clinical effect in treating pneumonia by using both ACTH and penicillin: the prompt defervescence and clinical improvement was not associated, however, with any decline in the number of organisms in the sputum. The authors decided not to recommend it.

Gamma globulin was being tried in polio, and "appears to be more practical to use than a vaccine." Beeson commented on "frequent statements in newspapers, some ... by responsible persons, indicating that an effective vaccine is about to be perfected."

Do you remember Bornholm disease? Epidemic pleurodynia—there was an entire section on this, including a report of a laboratory outbreak in London that suggested Coxsackie virus 2 as the etiologic agent. That year we diagnosed this disease all over the place.

Still controversial was the pathophysiology of rheumatic fever, in fact, of all collagen diseases: the place of salicylates in treatment, the role of ACTH and cortisone, and the part that penicillin might play in prevention or treatment. Belief that foci of infection were either the cause of or played some part in ill-defined aches, pains, and fatigue, as well as in more serious conditions, such as iridocyclitis, rheumatoid arthritis, and glomerulonephritis, had been around since 1912. The faith was waning by 1950, but it was hard for many of us to let go.

Pulmonary tuberculosis filled 26 pages in the 1951 *Yearbook*, compared with 38 pages five years earlier, and six pages two decades later. Even though streptomycin and para-aminosalicylic acid in combination were beginning to look promising, bed rest, surgery, and collapse therapy remained the mainstays of treatment. Disappointment with streptomycin therapy in tuberculous meningitis led to a trial with combined therapy using tuberculin intrathecally. Dr. Beeson found this "an exciting idea," and recommended further trial "by capable clinicians." Robert Koch had promoted his tuberculin as a cure for TB 60 years earlier.

Hypertension appeared to result from renal ischemia and the release of renin; this was still the Goldblatt Era, although Hans Selye implicated the pituitary as mediating the stress response through the adrenals. Treatment for severe hypertension included the Smithwick operation of sympathectomy, especially if there was papilledema, or perhaps a trial of potassium thiocyanate or one of the veratrum alkaloids; otherwise weight reduction, low protein, and a "very low sodium diet." These were the years of the Kempner rice diet; drugs other than mild sedatives were rarely used. The recommended dietary regimens differed little from that recently rediscovered and reported in the *New England Journal of Medicine* (17 April 1997).

Except for some types of congenital heart disease, which by 1950 could be accurately diagnosed by cardiac catheterization, surgery had little place in treatment. Without question, however, the increased understanding of cardiac physiology after the more widespread use of venous catheterization of the right atrium and ventricle was the most exciting news of the time.

Drugs for congestive failure were still pretty much limited to digitalis, mercuhydrin, sometimes ammonium chloride, and quinidine. Tinsley Harrison was the editor

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for the section on the Heart and Blood Vessels and the Kidneys; he concluded the abstracts:

> The evidence that hypercholesterolemia, however induced, favors the production of atheromatous changes in the coronary (and other) arteries seems indisputable....
>
> The old problem of the artificial kidney was attacked anew and may be approaching a solution....
>
> To the philosopher (or in the present instance, the pseudophilosopher) certain conclusions seem to emerge from this brief survey of the rapid progress made in the cardiovascular field during the past decade. The first is that few problems in medicine are inherently insoluble. If the problem of bacterial endocarditis can be largely solved, if blue babies can live to be pink adults, if persons with congestive heart failure can be kept alive for many years and often for decades, if an optimistic viewpoint toward ... atherosclerosis has emerged, it would be folly to believe that disorders which now seem totally hopeless will remain so (p 477).

The etiology of peptic ulcer was admittedly unknown, although few doubted the sequence of stress, vasoconstriction in the gastric antrum and the duodenum, hypo- or anoxemia of the tissues, vagus stimulation, increased gastric secretions including acid and pepsin, and finally necrosis and ulceration. Increasing dissatisfaction with the Sippy regimen of whole milk or cream and absorbable antacids resulted in trials with protein hydolysates and all manner of antacid salts of magnesium, aluminum, and calcium. One gastric hemorrhage or perforation meant a subtotal gastrectomy and most likely a vagotomy.

No question, those were simpler days. You could count the useful drugs on the fingers of your two hands. RNA and DNA were mostly unheard of. That DNA carried some sort of genetic information had been known as early as 1944; however, not until 1953 did Francis Crick and J.D. Watson show that the DNA molecule was a double helix. Cellular and molecular biology were barely on the horizon for most of us, and we begged for crash courses from our friendly biochemist colleagues. How hormones worked, why some bacteria and viruses caused disease, what the mechanism of inflammation and immunity was—all this was beyond us. Cells had membranes, cytoplasm, a nucleus, and some funny thing called a Golgi apparatus. What else was there to know?

We all sensed, however, that we were at the beginning of amazing times in science, in space, and in medicine, and indeed during the spring clinical meetings in Atlantic City we often agreed over cocktails that we were lucky to be living in the Golden Age of medicine.

In another half century, in 2047, medical residents studying today for their boards will be pushing four-score years. With successful aging, many may still be in practice. Society will have moved out of its doldrums by then; medical care will be as universal as air and will have broken free from its destructive liaison with the insurance industry; funding for research will once again be in ascendancy.

Science for 4 April 1997, with its cover illustrating the Prometheus myth, featured in its "Frontiers in Medicine" the regeneration of tissues, organs, and even eyes and limbs, reminding its readers of that unhappy Titan, who, after stealing fire from Olympus to give to mankind, was punished by Zeus by being chained to a pillar in the Caucuses where a vulture tore at his liver all day, year in and year out; and there was no end to the pain because every night his liver grew whole again.

Surely to know how to regenerate organs would be almost the end of all our seeking, to be able not merely to transplant but to grow new organs in patients who had lost a critical part of one of theirs to trauma or disease. The possibilities, to use a figure of the 17th-century physician Thomas Browne, stretch the *Pia Mater* almost to its breaking! How many of us have wondered why worms and cockroaches and amphibians should have denied to us, their mammalian descendents, this special blessing.

They didn't withhold the secret entirely. Removing two thirds of the liver in rats is followed by regeneration, if intact lobes are left behind, and is complete in five to seven days. Even in dogs and human beings regeneration is proportional to the amount of liver mass removed. This is not new, but unraveling the mechanisms is. Stem cells in the brain have been identified that may, when the mechanism is better understood, provide the means for reconstructing the diseased or injured brain or cord.

Some amphibians can regenerate organs and complex structures, new limbs, parts of the heart, retinas and lenses; that is beyond the capacity of the rest of us vertebrates. But the relatively new sciences of cellular and molecular biology have tackled problems as tough as this before.

Exciting indeed, but we still have work to do to make the best use of what we already know. The American College of Physician's 15-year-old Clinical Efficacy Assessment Project (CEAP) has recommitted itself to evidence-based medicine, working in cooperation with the American Heart Association and the American Academy of Pediatrics. Nothing new here: Pierre Louis in 1835, by studying the course of the disease in many cases of pneumonia, erysipelas, and tonsillitis, was able to show that the universal treatment of the time, blood-letting, simply made no difference in outcomes. Before we go too far in writing standards for care in our overgrown late 20th-century medicine, we need better evidence that what we do makes a difference. Pierre Louis' work led to something like therapeutic nihilism. This is not tenable today, of course, but a little touch of it might be salutary for both patients and those who pay the bills.

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MEDICAL NEWS CAPSULES

This Month's Reading in Review

TIMOTHY B. NORBECK

When a 44-year-old man experienced chest pains at home, he called 911 and was transported to the local hospital's emergency department.... The emergency physician took the necessary history, performed the appropriate tests, and determined that the patient had indigestion.... "The one thing the patient had not done during that incident was to call his managed care plan for authorization," said Daniel Sullivan, M.D., president of the Illinois College of Emergency Physicians.... "That plan does not reimburse emergency department visits for non-emergencies.... Because indigestion is not an emergency, the plan did not pay for the ambulance transport or for the service."

A month later, the patient again felt severe chest pains and shortness of breath.... He remembered his last experience and called the managed care plan first.... "The plan representative told him to stay at home and rest," Dr. Sullivan said.... "An hour later the patient was transported to the emergency department and died."

Illinois Medicine (28 March 1997)

NOTE: Dr. Sullivan related this case when he testified before the Illinois House Committee on Health Care Availability and Access at a hearing in Springfield on February 26.

"In Arkansas, an insurer refused for almost a year to pay the emergency-room bills of a patient who suffered a broken neck in a car wreck. Why? The emergency care wasn't preapproved. In Michigan, an insurer used the same reason to deny a $1,200 claim after a woman was rushed to a hospital in full cardiac arrest. She died; the bill lived on."

USA Today (9 April 1997)

NOTE: Opponents of managed care reform refer to such cases (and these are just a few of a growing list nationwide) as mere anecdotes. How many anecdotes are necessary to constitute a serious problem?

"More than two million Maryland residents, which the *Washington Post* notes is more than a third of the state's population, are in HMOs—and they are 'flooding lawmakers with unhappy tales.' To top it off, most of the HMO members are solid middle-class citizens, the kind of people who can not only vote against you, but contribute their money—and influence with friends and neighbors—to your defeat at the next election. So attention will be paid."

Charles Peters in the *Washington Monthly*
(April 1997)

A Nevada woman who purchased a used computer for $159 discovered that it contained 2,000 patient records from a Tempe, Arizona, pharmacy.... The computer program had social security numbers and the patients' prescription histories.

New York Times (4 April 1997)

A new state audit has found that the California Department of Insurance "has delayed investigating thousands of complaints and has 'significant deficiencies' in the way it manages funds."... Armed with the audit, a joint meeting of the state Senate and House insurance committees will "closely examine the inner workings" of the department.... Lawmakers are paying "close attention" to the department because its "activities affect so many consumers and a powerful industry."

San Francisco Chronicle (19 March 1997)

"HMOs are coming under attack from so many directions that they can no longer shrug it off. At the heart of the concern with managed care is whether a health system that once had few cost controls is now being driven by too many, in some cases to keep shareholders happy with fat profits. Peter Van Etten, president of Stamford Health Services, said 'In this insanity of economics in health care, the patient always loses.'"

Time (14 April 1997)

"We don't have any other authority to enforce any sort of market standards for self-funded plans. We often get complaints from patients, but cannot help because their company is self-insured. Who is going to respond to those consumer complaints?"

Kansas insurance Commissioner Kathleen
Sebelius, in explaining why she believes
Congress needs to regulate self-insured plans.
CQ (15 March 1997)

Only in America: The Library of Congress spent $60,000 last year to create a braille edition of *Playboy* magazine.

The Washington Monthly (April 1997)

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TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

"Mister" Instead of "Doctor"

To the Editor: In a recent issue of *Connecticut Medicine,* Doctor Massey wrote about The *Hartford Courant* having referred to a surgeon as "Mister" instead of "Doctor."

Had the surgeon been in Great Britain, he would most certainly have taken offence at being called "Doctor," in a land where surgeons prefer being referred to as "Mister." A senior nurse is "Sister," a descriptive title that has no religious connotation. Consider the following Operating Room dialogue:

"Scalpel, nurse."

"Yes, doctor."

"Mister, nurse."

"Sister, mister."

Sundaram V. Ramanan, M.D.
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Clinical Instructor, Yale University School of Medicine

The editor responds: Yes, but "sister" *did* have a religious connotation prior to the *final* establishment of the Church of England in the reign of Elizabeth I. And the Mister-Doctor matter has had a convoluted history in Great Britain—one which never quite made it across the Atlantic!

Robert U. Massey, M.D.
Editor

Free Starter Kit for Donated Supplies

A free starter kit is available to nonprofit organizations, showing how to receive new, donated supplies and equipment. The goods are available through the nonprofit National Association for the Exchange of Industrial Resources (NAEIR), which collects and redistributes corporations' donated products. Recipient groups pay dues ranging from $255 to $575, plus shipping and handling, but the merchandise itself is free. Participants select what they need from 250-page catalogs containing such items as office supplies, personal care products, clothing, janitorial supplies, toys and games, computer software, maintenance items, hand tools, and holiday party goods. NAEIR says member groups receive an average of $2,000 worth of new supplies per catalog. For your free starter kit, including application forms, call NAEIR: 1-800-562-0955.

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From the Executive Director's Office

COUNCIL MEETING

WEDNESDAY, 12 MARCH 1997

Attendance

Present, in addition to the Chairman, Dr. Joseph Czarsty, were Drs. Ahamed, Beck, Bigos, Bobruff, C. Czarsty, Deren, Eslami, Fischbein, Franklin, Freedman, Kamens, Katz, Keating, McDonnell, Montegut, Mushlin, Schwartz, Sosa, Watson, and Wetstone.

Also present were: Mr. Norbeck, Ms. Lindquist, Mr. Brunell, Ms. Morelli, Ms. Norbeck, and Ms. Schaffman (all CSMS staff), Mr. Thompson (FCMA staff), Ms. Debiase (HCMA staff), Ms. Harney (NHCMA staff), Mr. Schuman (NLCMA staff), Dr. David Thompson (CSMS/IPA), Mr. James Darnell, and Stephen Hoffman (Alliance of Health Advisors, Inc.)

Absent were: Drs. Brooks, Geary, Handelman, Herzog, Hollister, Lesnik, Narayanan, Redmond, Sadowski, Scarpa, Tesoro, Timmerman, Wesler, Wolfson, and Zeppieri.

Reports of Related Organizations

CSMS-IPA: Dr. Thompson reported that since the affiliation with Health Systems International (HSI) more money goes to the CSMS-IPA and less to administration, inpatient care, ancillary services, and profit than before. It was reported that even though the market will not allow any overall increases in premiums, M.D. Health Plan is going to increase significantly the portion of that premium that goes to the CSMS-IPA. HSI developed a system to control inpatient care which was physician invented, physician adjusted, physician implemented, and also the most successful at controlling costs of any system in the nation. This system is successful today at M.D. Health Plan. In 1996, inpatient costs were reduced enough so that the premiums could be reduced to match the market without reducing the amount given to the CSMS-IPA to cover its share of the medical costs. It was stated that proper medical care is the basis for decision making, not some arbitrary number of days from a chart. The patient's attending physician and a physician from the plan work together to decide the best care for the patient. Optimal medical care is the goal, and it is cost effective to do it right the first time.

The Board of Directors of CSMS-IPA has remained true to its mandates:

1. Any Qualified Provider: All CSMS members who wish to participate.
2. Open access with no gatekeeper, although an expensive freedom, is one to which they remain committed.
3. No individual physician capitation is allowed in M.D. Health Plan.
4. *No Gag Clauses:* Physicians will decide with absolutely no limitation on the types of care that can be considered. No attempt to restrict the discussion or the advocacy on behalf of the patient is expected or desired by the CSMS-IPA.
5. Physician control of every aspect of medical care delivery is what CSMS-IPA is all about. The 24-member Board of Directors of CSMS-IPA is 100% physicians. All utilization decisions, initially and more importantly on appeal, are made by physicians. It will become more important that the CSMS-IPA with its all-physician Board of Directors and all-physician committees continue to provide a physician-controlled alternative in the market.

Mandatory HIV Testing

At the last Council meeting, it was voted that CSMS join AMA in support of mandatory HIV testing of pregnant women. Dr. Wilfred Reguero, representing the Connecticut College of Obstetricians and Gynecologists (ACOG), joined the Council to discuss the Council's action and the position of ACOG. Dr. Reguero stated that the position of ACOG is opposition to mandatory HIV testing for pregnant women, and they do not believe that mandatory testing is a wise thing to do. Their experience has proven that in making it mandatory, the number you get into HIV counseling and treatment is lost, the women do not come for care. ACOG recently met with the Connecticut Health Department and were in agreement that the nonmandatory policy is best. Dr. Reguero explained in detail the reasons for ACOG's position and stated that ACOG was disheartened to learn the position of CSMS, and is hopeful that the issue can be discussed again and come to some terms between ACOG and the CSMS that would be useful to the patient and the practitioner. It was VOTED to table this issue until the next meeting.

Report of the President

Dr. Deren stated that his report would deal with only one issue, the PSO, a topic which he believed is the most important issue. He reported that the Council has charged the PSO Committee to commission a feasibility study for the development of a statewide PSO organization. The

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PSO Committee heard a preliminary report of a feasibility study which is not completed, but because of the compelling information contained in it, he felt that the information should be brought to the attention of the Council as soon as possible and ahead of schedule. The PSO Committee unanimously accepted the report and referred it to the Council with the commendation that the feasibility study was excellent. He invited Mr. James Darnell and Mr. Stephen Hoffman from The Alliance of Health Advisors, Inc., to report to the Council the information given to the PSO Committee. Mr. Darnell reported that they spoke to over 200 physicians covering every county and studied 60 physician practices covering 40 primary care practices and 20 specialists. Mr. Darnell reported on marketing the program and key findings of what physicians would like. He reported that physicians are rapidly dividing into hospital groups or publicly traded corporations or individual corporations within the state. They were impressed with the number of physicians who are advanced in the areas of business management development and are taking action to develop relationships. Physicians with little or no experience are signing risk contracts with HMOs. It was reported that IPAs are developing in every county in the state but 45% of the physicians are not happy with hospital integrated programs. Managed care has created a problem in some physicians' offices, with increased paper work and administrative costs. It was noted that the percentage of revenue for those practices that have capitated plans ranges from 4% to 40%. There is growing capitation in Connecticut and many at risk contracts being negotiated. A large percentage of physicians will be making decisions on who to partner with within the next three to four months including 20 primary-care groups in the eight counties.

Mr. Hoffman reported that they were looking at different practices where opportunities for savings in the operation of the practices could occur. They identified areas which were felt to be significant: staffing problems, providing benefit packages for their employees, facility costs, and computer costs. When physicians were asked what they would like the PSO to do for them, it came down to these areas: resources, dealing with contracts, computer systems, some sort of management, and credentialing. Physicians in Connecticut, from the consultants' point of view, are quite involved in organizing themselves in one form or another, in both clinical work and the business of their medical practices.

Dr. Deren reported that with his many discussions with physicians throughout the state, they want and expect some action from CSMS now, and that is why he began to examine this study. They want some action in the managed-care arena, and these physicians have told him that they are in the position to make an immediate decision as to a practice management company they would want to affiliate with. The time is right to develop a CSMS program. After hearing the report of the feasibility study, the PSO committee had an extensive discussion and passed two resolutions by unanimous vote to present to the Council for action:

1. That the Council accept for information the preliminary findings of the PSO Feasibility Study, and
2. That the consulting company, The Alliance of Health Advisors, Inc., (AHA, Inc.) be commissioned to seek a physician-friendly organization that has MSOs in place with experienced management and staff, to jointly venture with CSMS physicians to establish a physician-controlled organizational vehicle acceptable to CSMS, and to report back the resulting proposals to the Council.

It was VOTED to accept paragraph 1) of the resolution as information.

It was VOTED to adopt paragraph 2) of the resolution unanimously.

Dr. Deren stated that, as this was probably his last appearance before the Council as president, he wished to thank the Council members for their support. He also read a list of 12 commandments for the guidance of the incoming president.

Report of the Executive Director

Mr. Norbeck reported on the following items of interest:

It was reported that the U.S. Supreme Court refused to hear the Cigna Health Care of Connecticut appeal of a case which may decide a question at the center of the debate over managed care—whether or not HMOs have an unconditional right to deselect physicians in order to cut costs. By refusing to hear the case, the Supreme Court has removed the final obstacle to the lawsuit. Barring a settlement, the case will now proceed in the state Superior Court. Dr. Napoletano and the other deselected physicians claim breach of contract and unfair treatment by Cigna. After the Superior Court Judge agreed with Cigna that ERISA prohibits states from interfering with employer-provided health insurance plans, the case was appealed to the Connecticut Supreme Court with the help of CSMS and AMA, and that Court reinstated the case, ruling that ERISA "does not preempt this action and boldly reaffirmed the power of the state to regulate managed care companies." This was a substantial victory for physicians and patients. A letter from the attorney for Dr. Napoletano informing CSMS of the decision was distributed to members of the Council.

Drs. Deren and Parke and Mr. Norbeck spoke to the Senate Majority Leader, George Jepson, about information that had been passed on to CSMS, that at a speech he

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made at a physician-attorney conference he allegedly denigrated physicians and sounded like he did not support managed-care reform. Prior to making his presentation, we were told that he would support managed-care reform and that reform was coming. The Senator has apologized, and wishes to meet to discuss the matter further.

Registered nurses at 16 Kaiser Permanente Hospitals and 35 medical offices in Northern California have voted to strike beginning 16 April and to start mass picketing of Kaiser buildings. Kaiser plans to cut wages for some nurses who have been working without a contract since 30 January. Connecticut also has a problem with nurses and had a public hearing on the bill concerning nurses' authority before the Legislature.

HCFA announced a controversial plan to pay 41 New York hospitals 400 million dollars over the next six years to reduce residency slots. Some regard it as a "sweetheart" deal for New York. The *Washington Post* reported that hospitals nationwide are bombarding the Clinton administration in hopes of getting the same deal. Despite the criticism, many are saying that the HCFA pilot project is a clever approach that will both cut back on Medicare expenditures and make it easier for teaching hospitals to adapt to having fewer residents.

Mr. Norbeck thanked the many members of the Council and others who attended the public hearing and press conference on managed care. Many spoke and all were effective and helpful to the cause.

Coalition for Quality End-of- Life Care

At the January Council meeting, it was voted to support and cooperate with the AMA's Coalition for Quality End-of-Life Care. A copy of the draft guidelines "Approach to the Patient Considering Physician Assisted Suicide or Euthanasia" (PAS/E) was distributed with the agenda to all Council members. The Councilors were requested to review the guidelines and present, in writing, any comments they may wish forwarded to the AMA.

Legislative Report

The following resolution on "Consumer Protection: Quality in Medical Policy and Medical Review" was referred to the Council by the House of Delegates for action with the suggestion for support for incorporation in the Patient Protection Bill.

Resolved: that the Connecticut State Medical Society recommend the establishment of an independent healthcare appeals committee within the Department of Consumer Protection composed of Connecticut physicians nominated by the Connecticut State Medical Society, and be it further

Resolved that this resolution be forwarded to the Governor of the State of Connecticut and other appropriate bodies who are responsible for quality of medical practice, and this resolution be forwarded to the AMA for consideration.

It was VOTED to refer the resolution to the Committee on Legislation and have them report back on what action can be taken. The Committee reported that CSMS representatives met with the Governor's chief of staff to discuss the patient protection act and the issues of managed care reform. The patient protection act calls for the establishment of an independent appeals mechanism, but it does not specifically request that office to be placed in the Department of Consumer Protection. A copy of the resolution has been forwarded to the AMA.

A comprehensive package of material listing all of the bills of interest to CSMS and copies of testimony that had been given on some of the issues, press releases, and copies of newspaper articles reporting on our managed care study was distributed to members of the Council. Dr. Parke commented on some of the major issues. The report was 36 pages long and listed the text of the bills and the Society's position. The report was received as information.

Dr. Craig Czarsty brought up the issue of Federal legislation concerning Provider-Sponsored Organizations (PSOs). He quoted from an issue of *AMA News* as follows: "Although the AMA supports the idea of PSO legislation, the group has some concern about whether the legislation would allow physicians to organize PSOs. Right now the playing field seems to be tilted toward hospitals organizing PSOs or requiring physicians to organize with hospitals as capital partners. The bill does not define the term "provider" and the portion of the Social Security Act that authorized Medicare excludes physicians from the definition of "provider." He suggested that Connecticut legislators in Washington be contacted on this issue. Mr. Norbeck pointed out that in the Dr. Parke's legislative report it is to be noted that this issue is arising at state level also and that the Connecticut Hospital Association (CHA) has introduced a similar bill to allow provider sponsored organizations to provide direct services in Connecticut under the oversight of the Department of Public Health. CSMS has objected to the CHA language, which like their national position, requires that an acute care hospital be included in a PSO. CHA has been contacted by Mr. Norbeck to change some of the language in their bill, but CHA would not change the language. Mr. Norbeck reported that they would be carefully watching and opposing these bills both at national and state level.

American Medical Accreditation Program (AMAP)

Former AMA President, Robert McAfee, M.D., made a presentation to the Council on the American Medical Accreditation Program (AMAP). AMAP is a voluntary,

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comprehensive accreditation program which measures and evaluates individual physicians against national standards, criteria, and peer performance in five areas: 1) Credentials, 2) Personal Qualifications, 3) Environment of Care, 4) Clinical Performance and 5) Patient Care Results. Dr. McAfee reported that the first three phases will be operational within a month and the last phases within a year. He stated that the average physician in the U.S. belongs to 9.1 plans and must fill in recertification forms at least every two years and for some plans every year. He believed that physicians would be quite willing to have this done for them. Meeting and maintaining high standards earns a physician AMAP accreditation—the national benchmark of physician quality. It was reported that this is not a program to diminish the importance of board certification, but it is intended to enhance board certification. Dr. McAfee explained in detail the makeup of the five phases of this program. The program will be run by a governance structure that includes three trustees from the AMA because they are at risk for the fiduciary responsibility of this program, and also includes representatives of business, county, state, and specialty societies, HCFA, NCQA, and the Joint Commission. In addition there will be four advisory committees, the chairs of which will be on the governance body. Questions followed and it was VOTED to receive the presentation as information.

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Connecticut Medical Insurance Company

In accordance with Council action, prior to each House of Delegates meeting, a report is presented from CMIC. A report was received from Dr. Sultan Ahamed, President and Chairman of the Board of CMIC. He reported that for 1997, CMIC announced no rate increase for the sixth time in the past eight years. In 1996, 345 physicians joined CMIC bringing membership to an all time high of 3,121, a net increase of 142 new physicians. In 1996, 85% of cases that went to trial ended in a defendant's verdict. Dr. Ahamed mentioned that competition is coming into the state, undercutting CMIC premiums and some of the physicians are switching their insurance. CMIC is looking at all options to protect their market share. It was VOTED to receive the report as information.

Distinguished Citizen's Award

In June 1966, it was voted to approve a recommendation of the president to establish a Distinguished Public Service Award to a nonphysician. A committee was appointed to establish the criteria for this award. At the 3 October 1996 Council meeting, the committee submitted the criteria, which were approved by the Council. The Committee on Public Affairs was charged to screen the nominations and make a recommendation to the Council.

The Committee on Public Affairs recommended that Mr. Robert (Bob) Macauley, founder and CEO of AmeriCares, receive the first CSMS Distinguished Citizen Award. It was reported that there were three nominees. Mr. Macauley founded AmeriCares in 1982, after receiving a plea from Pope John Paul II to deliver medical supplies and assistance to Poland, then struggling under martial law. Since that time AmeriCares has provided medical aid and relief to thousands of people worldwide. The Committee on Public Affairs recommended that a suitable plaque be presented to Mr. Macauley at the House of Delegates meeting and that a recommendation be made to the Charitable Trust Foundation that it consider making a $5,000 donation to AmeriCares.

The Council VOTED to approve the recommendations of the committee.

CMIC Board of Directors

A communication was received from CMIC informing CSMS of the physicians to be nominated as directors at the CMIC annual meeting on 14 May 1997. They are: Kirana Kefalos, M.D. New Haven County, Neil Klein, M.D., Fairfield County, Stephen Leach, M.D., Windham County, Robert Linden, M.D., New London County, Stephen O'Brien, M.D., Hartford County, and Brian Van Linda, M.D., Hartford County. The Council VOTED to receive this communication as information.

Blue Cross/Blue Shield Merger

The Blue Cross/Blue Shield merger with Anthem was discussed and the Council expressed concern and VOTED to monitor the negotiations of the merger.

Dates of Future Meetings

Council Meeting—At the call of the President

Semi-Annual Meeting—House of Delegates—
Wednesday, 12 November 1997

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"M.D. ADVANTAGE"

CSMS TO LAUNCH STATEWIDE MSO

After a year-long feasibility study and search for a capital partner, physicians throughout Connecticut will soon have access to a full spectrum of practice management and network development services from a physician-friendly, physician-directed MSO (medical service organization) called ***"M.D. Advantage."*** At a special meeting held 12 May 1997, the Connecticut State Medical Society's Council voted overwhelmingly to partner with the MED3000 Group, Inc., which has already developed and administered successful physician-owned local MSO's in several states, including Connecticut.

The new company, to be at least 51% owned by CSMS, will be staffed and capitalized by MED3000, and headquartered near CSMS in the New Haven area. It will respond to the findings of a feasibility study involving 200 CSMS doctors and 50 group practices completed in March. Most physicians would prefer a physician-friendly alternative rater than sell out to hospitals or to commercial management companies. But practice management has become so complex that some 9% are already committed to, or on the verge of such arrangements. The study found that physicians want a full range of practice management, information, and network development services, but without losing their clinical, professional, and business autonomy. The goal is to optimize the administration of the business of medicine at the local level through value-added partnerships with and among physicians.

As with previous challenges to the practice of medicine in our state, CSMS leaders from all the counties have responded promptly and proactively, to preserve the independence and integrity of each physician's medical judgment, and to protect the sanctity of the patient-physician relationship from an increasingly perverse health care marketplace.

CSMS leaders are recommending that physicians seeking administrative assistance give consideration to this newest, physician-driven MSO model. Unlike previous CSMS start-up projects, there will be no need to raise capital from CSMS or its members. Our MED3000 partners are already up-and-running here, and will soon bring your new CSMS-MSO to operational status.

The M.D. Advantage—It's yours!

HUMAN SERVICES
UNIVERSITY OF MARYLAND, BALT

North Dakota Medical Association Develops Physician Relief Program for Grand Forks

PHYSICIANS NEEDED FOR RELIEF PROGRAM

The North Dakota Medical Association announced a state-wide effort to provide physician relief services to assist in the early reconstruction effort in Grand Forks.

Robert Grossman, M.D., president of the Association explained the program. When the residents of Grand Forks and other communities along the Red River are allowed to return to their homes, we must be prepared to provide necessary medical care. Most local physicians will be returning to damaged homes, and will certainly want to assist their families and friends in the clean-up effort. We are asking other physicians across the state and country to help out during this most difficult transition period by providing their on-site medical expertise."

The North Dakota Medical Association has started collecting names of physicians around the state and the country who would be willing to come to Grand Forks and provide relief cover for Grand Forks physicians when they return to the city. The majority of the 170 area physicians have been gravely affected. Their homes are severely damaged, their families are spread all over the country, and their patients are all temporarily relocated.

Within the next two weeks we will be arranging for relief physicians for the Grand Forks area. We are working closely with the local providers, the state health department, and the U.S. Bureau of Primary Health Care in this effort.

Physicians in any specialty wishing to volunteer their services during the upcoming weeks of restoration are asked to call 1-701-223-9475 or 1-800-732-9477 to register with the Association. All services, regardless of duration, would be greatly appreciated.

If any physicians in your state would be willing to help in this relief effort they should call the North Dakota Medical Association at 1-800-732-9477. Licensing should not be a problem if they hold a valid license in their home state. Housing will be provided for the relief physicians and physicians may donate their time or receive remuneration. Also, physicians should check with their malpractice carriers to assure they are covered when they practice in North Dakota. The immediate need is for emergency room physicians but primary care and all other specialties will also be needed. Thank you in advance for all your help and support. A disaster like this truly strengthens the spirit and determination of the people of North Dakota and our nation.

HEALTH SCIENCES AND

IN MEMORIAM

ALBAMONTI, MARIO J., Tufts University School of Medicine, 1938. Dr. Albamonti was on the medical staff of The William W. Backus Hospital from 1941 until his retirement in 1982. He served terms as chief of obstetrics and as chairman of The William Backus Hospital Medical Board during the 1960s. In addition to the Norwich Medical Society, Dr. Albamonti was a member of the New London County Medical Association, where he served as president from 1962 to 1963, the Connecticut State Medical Society, and the American Medical Association. Dr. Albamonti died 18 February 1997 at the age of 84.

EGEE, J. BENTON, Hahnemann Medical College, 1934. Dr. Egee maintained a general medical practice in Newtown from 1935 to1965. Subsequent to that, he served as chief of staff of Emergency Room Services at Danbury Hospital, retiring from that position in 1977. Dr. Egee was health officer and school physical and medical examiner for the town of Newtown. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Egee died 25 March 1997 at the age of 89.

EPSTEIN, BENJAMIN, Medizinische Fakultät der Universität Wien, Austria, 1942. Dr. Epstein maintained a family practice in Danbury for 40 years. A former president of the Danbury City Medical Association, Dr. Epstein was a member of the Fairfield County Medical Association where he served as a delegate to the Connecticut State Medical Society from 1962 to 1975, the Connecticut State Medical Society, and the American Medical Association. Dr. Epstein died 13 March 1997 at the ageof 86.

FOOHEY, FLEUR C., Laval University Faculty of Medicine, Quebec, 1943. Dr. Foohey, an ophthalmologic surgeon who also was a lawyer and engineer, practiced for 50 years in Hartford, first as a general surgeon and later, after adding an ophthalmology specialty, as an eye surgeon. He was associated with St. Francis Hospital and Medical Center. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Foohey died 15 March 1997 at the age of 84.

KILGA, LAWRENCE A., Medizinische Fakultät der Universität Heidelberg, Baden-Württemberg, Germany, 1972. Prior to his retirement in 1994, Dr. Kilga worked for the Department of Public Health and Addiction Services. He was a member of the Middlesex County Medical Association and the Connecticut State Medical Society. Dr. Kilga died 22 November 1996 at the age of 65.

LEVINE, ABRAHAM I., New York University School of Medicine, 1935. Dr. Levine practiced medicine for 60 years, the last 44 years, prior to his retirement in 1994, in Rowayton. He was medical director of Connecticut Counseling Centers Inc. for the past 10 years, a volunteer at the AmeriCares clinic, a member of the Norwalk Board of Health, and chairman of the local chapter of Physicians for Social Responsibility. Dr. Levine was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Levine died 1 April 1997 at the age of 85.

LIPKOFF, CLARENCE J., New York University School of Medicine, New York, 1936. Dr. Lipkoff had a private general surgery practice in Milford. He was an assistant medical examiner for the state, and was director of Utilization Review and Medical Quality Assurance for Milford Hospital for many years. Dr. Lipkoff was a member of the New Haven County Medical Association where he served as a delegate to the Connecticut State Medical Society from 1977 to 1984, the Connecticut State Medical Society, where he served on the Committee on Public Health from 1986 to 1994, and the American Medical Association. Dr. Lipkoff died 11 February 1997 at the age of 85.

MEIGS, J. WISTER, Harvard Medical School, 1940. Dr. Meigs began teaching at the Yale School of Medicine in 1947 in the department of epidemiology and public health. He was the director of the Connecticut Cancer Epidemiology Unit and was the director of Yale's residency training in preventive medicine. One of the founders of the Occupational Medical Association of Connecticut, Dr. Meigs consulted on safety and health at major New Haven area corporations. He was a member of the New Haven County Medical Association, the Connecticut State Medical Society, where he served on the Committee on Industrial Health, the Committee on Public Health, and the Cancer Coordinating Committee, and the American Medical Association. Dr. Meigs died 25 March 1997 at the age of 82.

PURNELL MARTIN, MARJORIE A., Boston University School of Medicine, 1949. Dr. Purnell Martin was former Chief of the Department of Family Practice at Rockville General Hospital where she served three years as president of the medical staff. She maintained a family practice in Rockville from 1952 until her retirement in 1984 and served as the Director of Health for the town of Tolland. Dr. Purnell Martin was a member, and past president, of the Tolland County Medical Association, the Connecticut State Medical Society where she served on numerous committees from 1960 to 1987 including serving as chairman of the Committee on Public Health, and the American Medical Association. Dr. Purnell Martin died 6 April 1997 at the age of 81.

VAN DYK, ARNULF R., Faculteit der Geneeskunde Universiteit van Amsterdam, Netherlands, 1938. Dr. Van Dyk, an orthopaedic surgeon, practiced in New London through the 1950s and 1960s. Prior to that, he served as a physician at a rubber plantation in Sumatra and had spent a year as a physician with Ringling Brothers Barnum & Bailey Circus. He also volunteered for two tours of duty in Vietnam where he provided specialized treatment to adults and children. He was awarded a citation from the American Medical Association for his "humanitarian service" in Vietnam. Dr. Van Dyk was a member of the New London County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Van Dyk died 19 February 1997 at the age of 92.

HUMAN SERVICES
UNIVERSITY OF MARYLAND, BALTIMORE

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

HEALTH SCIENCES AND

OPPORTUNITIES FOR PRACTICE

FAMILY PRACTICE

Central Connecticut. Two opportunities for BE/BC family practitioners. One opportunity exists in an all female women's health group consisting of two family practitioners, four OB/GYNs and three CNMWs. Another opportunity exists with a young, well-respected, three-person group with two modern, spacious practice locations. Both have competitive compensation packages leading to full partnership and are affiliated with Bristol Hospital, a 150-bed, progressive, community hospital, serving a population of 100,000. Call (800) 892-3846 or fax us your CV at (860) 585-3525.

INTERNAL MEDICINE

Seeking part-time board certified internist to work in Avon office. Flexible hours. Please call Dr. Ralph Rosenberg at (860) 677-5533 or fax C.V. to (860) 678-1305.

Central Connecticut. Internist or Family Practice physician needed for very busy hospital-affiliated, off-site medical clinic serving a population of approximately 100,000. Competitive compensation package; attractive call schedule. Call (800) 892-3846 or fax your CV to (860) 585-3525. No J-1 Visa opportunities available.

Physician Consultant - Self-funded claims payer seeking physician in internal medicine to perform reviews of medical records and provide consultation/advice on medical issues related to claims payment. Reviews would encompass all aspects of medical care. If interested, call Rosemary Goudy or Pat Sandillo at (203) 876-3100.

MEDICAL DIRECTOR

New Britain General, a teaching hospital in central Connecticut, is seeking a full-time physician for its busy and growing occupational health center. The physician practice is exclusively occupational health with a focus on workers compensation management and return to work. A strong emphasis on client relations is key to our success with our 240 employer clients and their more than 20,000 employees. Candidates must be BC/BE in occupational medicine, or BC in emergency medicine, internal medicine or other specialty with occupational health experience. Competitive base salary, plus full benefits package. Please forward CV to: Elizabeth A. Lynch, Vice President, Human Resources, New Britain General Hospital, 100 Grand St., New Britain, CT 06050-0100.

PART-TIME

Multi-disciplinary clinic in Bristol seeking part-time neurologist, internist, family practitioner, physiatrist. Call (860) 583-4346 for more information.

PEDIATRICIAN

North central Connecticut growing pediatric practice seeking part-time BC/BE pediatrician to share office/hospital responsibilities, on call 1:10. Available immediately. Send CV to: P.O. Box 40, Somers, CT 06071 or fax (860) 875-1254 (call ahead).

PHYSICAL MEDICINE & REHABILITATION

Need personable physician for a multi-disciplinary practice, to perform exams, physical therapy direction, and evaluate injuries from motor vehicle accidents and on the job injuries. No beeper, weekends or rounds. Hourly pay $50.00 to $75.00/hour. Please fax CV to (203) 776-3171.

PRIMARY CARE

Currently seeking full-time/part-time (IM/FP) BC/BE physician with focus on women's issues to join a multi-service medical facility providing outpatient preventive medicine and primary care exclusively to women. The medical practice consists of 2 full-time primary care physicians, a physician's assistant, a nurse practitioner in adult medicine and gynecology, a nutritionist with individual weight loss and cholesterol reduction programs, three psychotherapists, ACR accredited mammography, ultrasound, massage therapy, and adjoining laboratory. Women's Care is proud of its comprehensive approach to medical care and health care maintenance and welcomes you to join our team of health care professionals committed to women's issues and education. For more information, contact: Caryn Nesbitt, M.D., Medical Director, 85 Poheganut Dr., Groton, CT 06340, (203) 448-6303.

HealthFirst, a growing regional community health center with three sites in eastern Connecticut seeks BC/BE FP/IM to provide full range of preventive and primary care. All sites are fully staffed, computerized and integrated into an organizational network. Competitive salary and benefits. For more information call or send CV to Recruitment Administrator: Roxanne Pandiani, 231 Broad St., Danielson, CT 06239, telephone (860) 774-7501, fax (860) 779-2191.

Established practice in southwest Fairfield County beach community seeks Family Practice/Internal Medicine primary care physician, full or part-time for busy practice. Hours and salary negotiable. Future early partnership. Fax CV to: (203) 655-8948.

Physicians Health Alliance, a multi-sited primary group practice in Massachusetts, is searching for several primary care physicians to service patients in southeastern Massachusetts. Positions available for internal medicine and family practice physicians, and an Urgent Care Director. Excellent salary and benefits, in addition to early partnership options. Please respond to: Roxanne Winsor, Physician Recruiter, 288 Bedford St., Whitman, MA 02382, telephone (617) 447-8164, fax (617) 447-8185.

PHYSICIANS WISHING TO PRACTICE IN THE STATE OF CONNECTICUT

GENERAL PRACTICE

Availability date flexible. Licensed in Florida, Connecticut, Oklahoma and Kentucky. M.D. at Autonomous University of Guadalajara, Mexico. Internship at Fredericton Hospital, Canada. Residency at Texas Tech. Would like to join a group, associates, institutional or industrial practice. Please respond to: Ira H. Liss, M.D., 7407 State Road 52, Hudson, FL 34667, telephone (813) 863-4753

INTERNAL MEDICINE

Available July 1997. Licensed in Connecticut. Passed National boards. American Board certified. M.D. at Tufts University School of Medicine. Internship and residency at the Hospital of St. Raphael. Office based general internist with extensive managed care experience, seeking to join a group or associates practice. Please respond to: Michael F. Collins, M.D., 53 Cotswold Close, Glastonbury, CT 06033, telephone (860) 633-5698.

Start date negotiable. Licensed in Connecticut. American Board eligible. M.D. at Universidad del Noreste, Tampico, Mexico. Internship at Flushing Hospital, Flushing, New York. Residency at Flushing Hospital and Maricopa County Hospital, Phoenix, Arizona. Seeking an office based; outpatient; ambulatory care practice setting. Please respond to: William M. DiFederico, M.D., 324 Sunnybank Ave., Stratford, CT 06497, telephone (203) 375-7472.

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Board eligible ENT completing facial plastic/reconstructive surgery fellowship. Excellent training. Seeking group ENT practice. Contact: E. Brunner, M.D., office telephone (416) 323-3900, home telephone (416) 929-8086.

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Available immediately. Licensed in New York and Connecticut. Passed National Boards. American Board certified. M.D. at New York College of Osteopathic Medicine. Internship at Grandview Hospital, Dayton, Ohio. Residency at Long Island Jewish Medical Center. Expertise in osteopathic manual medicine, orthopedic medicine, medical acupuncture, prototherapy and electrodiagnosis. Would like to join a group or associates practice. Please respond to: Steven A. Lager, M.D., 36 Arbor Lane, Roslyn Heights, New York 11577, telephone (516) 621-6476.

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PAID CLASSIFIED ADVERTISING

All PAID classified advertising orders, correspondence, and payments should be directed to: CONNECTICUT MEDICINE, Classified Department, 160 St. Ronan Street, New Haven, CT 06511, Tel. (203) 865-0587. The Classified rates are as follows: $60.00 for 25 words or less; plus $1.00 each additional word. For confidential answers, the cost is $3.00 per insertion, sent in care of CONNECTICUT MEDICINE. Ad copy must be typewritten, double spaced, with payment, and delivered no later than the first day of the month preceding the month of issue.

FOR SALE NORTH HAVEN

Classic two-story colonial office building—3,000 sq.ft. Fitted for modern medical practice. Offices, examining rooms, waiting room, storage, medical equipment, including x-ray available. Dow Realty Company, James S. Johnson: (203) 776-0000.

OFFICE SPACE FOR RENT

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BE/BC IM sought for extremely successful, growing multispecialty group. Lucrative salary and very aggressive productivity bonus. Comprehensive benefit package. Choice of multiple locations. Strong call coverage backup. Join a cutting-edge group that is already practicing 21st century medicine! Fax CV in confidence to Dr. P. Jacobs, E.J. Michaels, Ltd., (914) 833-1711; voice: 1-800-333-2999, (914) 833-1700.

HEALTH SCIENCES AND

Advanced Medical Recruiters, Inc.

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We also conduct personal custom searches based on qualifications, needs, and goals!

For further information, call 1-800-393-AMRI(2674)

Fax C.V. to (860) 793-6044

16–20 JUNE 1997

Update Your Medicine 23rd annual practical CME course with lectures, workshops, and Meet-the-Professor luncheons. Sponsored by Cornell University College in New York City and the Association of Practicing Physicians of The New York Hospital. 38 Category I AMA-PRA credit. Additional 13-1/2 credits available for Hands-on-Workshops. This program has also been reviewed and is acceptable for 38 prescribed hours by the American Academy of Family Physicians. Information: Lila A. Wallis, M.D., Director and Debora A. Laan, Coordinator/445 East 69th Street, Olin-Room 328, New York, NY 10021. Telephone: 1 (212) 746-4752.

Cutting Edge in Headache Treatment: Third Connecticut Update on Head and Neck Pain

Cosponsored by the
Headache Consortium of New England
and
The University of Massachusetts Medical School

Radisson Hotel, Cromwell, Connecticut
Saturday, 25 October 1997

Contact Person: Dr. Sheldon G. Gross
(860) 232-4344
Fax: (860) 242-7725

Physicians Needed for Camp AmeriKids

Camp AmeriKids is the domestic program of AmeriCares, which offers the opportunity to disadvantaged inner-city children infected with or affected by a life-threatening illness, to attend a summer camp program for one week during the month of August.

This week away in the country offers them a respite from the summer heat of the city, as well as a chance to forget about the illness, poverty, and crime that surrounds them on a daily basis.

Last year we were fortunate to have two pediatricians per week volunteer their time. Due to changes in residency programs or job situations, none of the six physicians from last year will be able to join us again this year, except for one.

If you are interested in becoming a volunteer at **Camp AmeriKids**, please call Caroline Kellersman, Assistant Camp Director, at (800) 486-HELP.

Please help us by spreading this information to any of your colleagues that may possibly be interested, we would be extremely grateful.

Camp AmeriKids

Founded by AmeriCares

Volunteer Information: **Camp AmeriKids** provides a summer camping experience for children who are infected with a life threatening illness and need special medical attention, as well as for children whose families are affected by such illnesses. This camp is offered to those who cannot afford commercial camp fees, and is provided at no cost to the participants.

This year, Camp AmeriKids will operate three sessions between 7 August and 30 August. We hope that you will be able to join **Camp AmeriKids** as a volunteer counselor for one (or all!) of these sessions.

***Camp AmeriKids** 1997 is:*

- providing 360 medically and economically needy children between the ages of six and 12 with a summer camping experience.
- working with social service agencies in the inner cities of New York, New Jersey, and Connecticut to identify our campers.
- operating three week-long sessions between 5 August and 31 August at the Fresh Air Fund's Camp Hidden Valley in Fishkill, New York.
- recruiting volunteer camp counselors and medical personnel from teaching hospitals to staff each camp session.
- looking for your help through financial contributions and donations of supplies and equipment. Your support would enable **Camp AmeriKids** to give hundreds of children an otherwise unavailable summer experience.

If further information is needed please contact Caroline Kellersman, Assistant Camp Director, at (800) 486-HELP.

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HEALTH SCIENCES AND

A Pro talks about Long-Term Care Liability

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For many years, Barbara Staples has worked with medical professionals — first as a nurse, then as a claims specialist with the ProMutual companies. Here are some of her observations on the changes taking place in long-term medical care:

On early discharges: *"Acute care in-patient hospitalization stays are much shorter today, resulting in more admissions to long-term care facilities and nursing homes. With this comes the potential for added liability."*

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On communication: *"Our claim staff is experienced in the management of professional liability claims. We are committed to excellence in the areas of service and communication during all phases of the claim process."*

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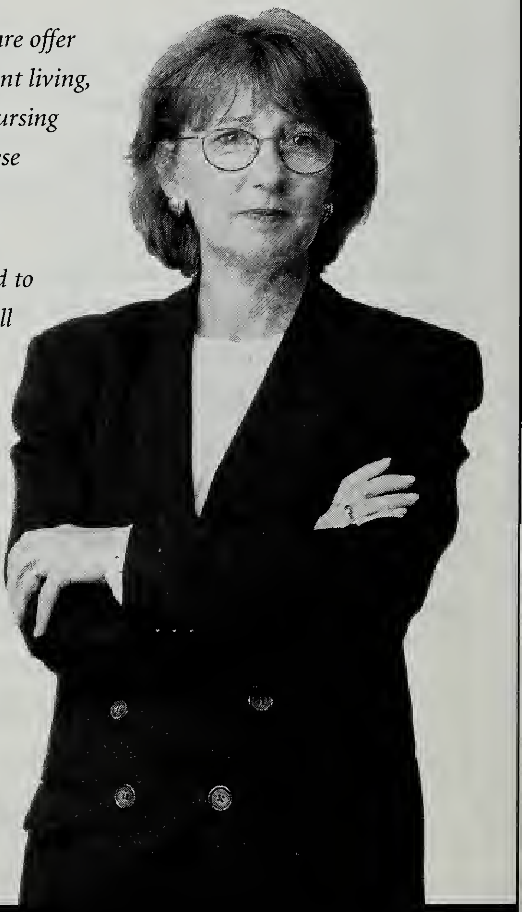

Barbara Staples
Claim Supervisor

Connecticut Medicine

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HEALTH SCIENCES AND
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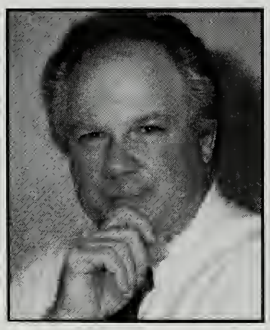
in retirement?



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MOHAMMED A. QUADER, M.D., JOHN D. MacARTHUR, M.D.,
AND PERRY SHEAR, M.D.

ABSTRACT—Anterior cervical osteophyte is a rare cause of dysphagia usually occurring in the elderly. We report two cases in which the anterior cervical osteophytes impinged upon the esophagus, and we describe their surgical management. Initial investigation of a case of dysphagia should be directed to the common causes; however, in the elderly and in those with disorders of the cervical spine an anterior cervical osteophyte may be the cause of dysphagia.

Introduction

OSTEOPHYTES and other hypertrophic abnormalities may be caused by degenerative changes in the cervical spine. Hypertrophic cervical osteophyte is a rare cause of dysphagia. A review of the literature revealed 70 cases of dysphagia secondary to large anterior osteophytes, and the majority are due to diffuse idiopathic skeletal hyperostosis (DISH). Dysphagia occurs in 17% to 28% of patients suffering from DISH.[1] There are four main causes of cervical osteophytes: DISH, spondylosis deformans, ankylosing spondylitis, intervertebral osteochondrosis (including degenerative disc disease).[2] A case of post-traumatic anterior osteophyte causing dysphagia has been reported.[3]

Case Reports

Case 1.—A 70-year-old female presented with a six-month history of anterior neck pain, swallowing difficulties, and a sensation of a lump in her throat. She had no focal neurological deficit. Esophageal and laryngeal indentation was demonstrated by laryngoscopic examination. Indentation of the esophagus by the projecting cervical osteophyte was demonstrated even in the lateral film of the neck (Fig. 1). A cervical computed tomographic (CT) scan showed a large anterior cervical osteophyte at the C4-5 level with laryngeal and esophageal deformation. The osteophyte was accessed by an anterior cervical approach. After obtaining a cross-table lateral film to confirm the position of the osteophyte, it was excised, relieving the indentation in the esophagus and the larynx (Fig. 2). Ten days postoperatively she was eating a normal diet.

Case 2.—A 75-year-old male presented with a one-year history of difficulty swallowing both solids and liquids. He complained of excessive secretions, fits of coughing while swallowing either solids or liquids, and occasional sensation of choking. He had no focal neurological deficit. A barium swallow demonstrated a large osteophyte at the C4-5 level indenting the hypopharynx (Fig. 3). This was further confirmed by a CT scan of the neck (Fig. 4). Using an anterior approach the large anterior C4-5 was resected leading to a resolution of the problems by the 10th postoperative day.

Discussion

Cervical osteophytes cause dysphagia by a variety of mechanisms:

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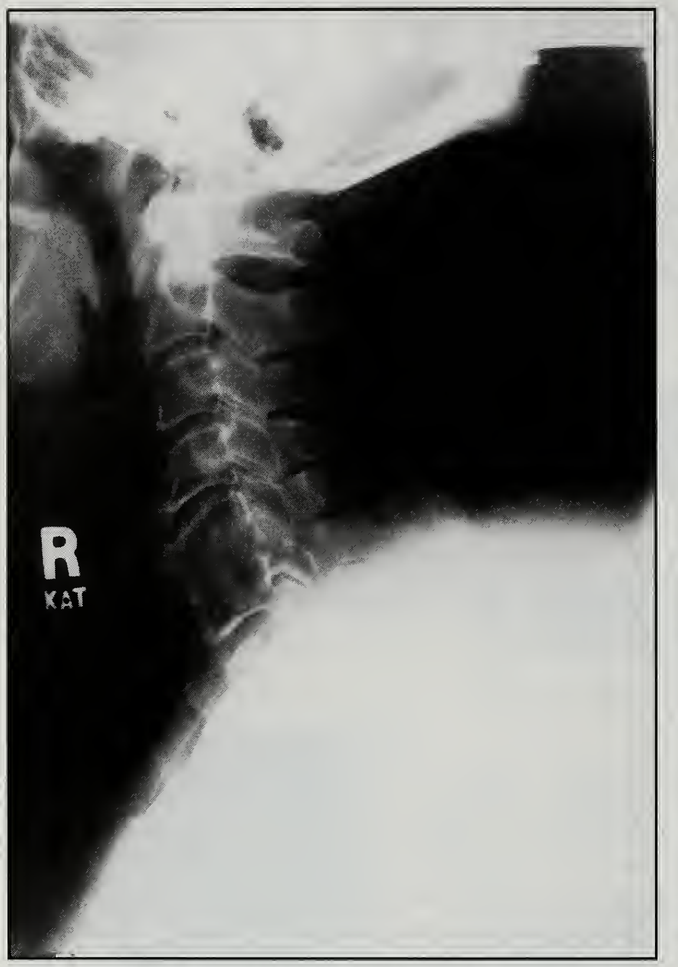

Figure 1.—Lateral cervical spine roentgenogram demonstrates the esophageal indentation by a large anterior cervical osteophyte at the C4-5 level.

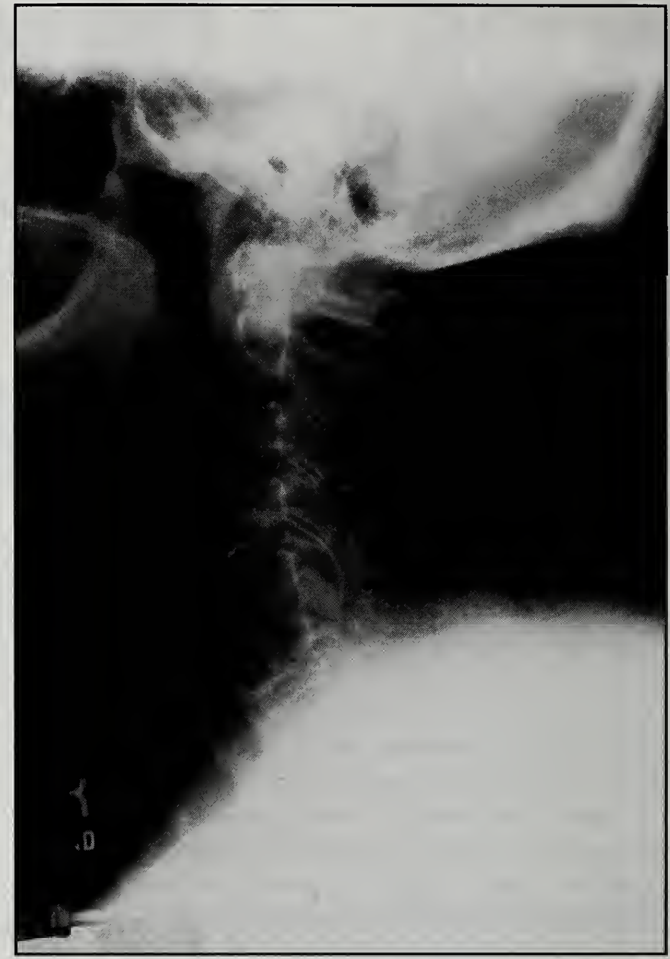

Figure 2.—Postoperative roentgenogram after excision of osteophyte shows absence of indentation in the esophagus.

1. Direct mechanical compression of the esophagus. The esophagus is fixed at the level of the cricoid cartilage C5-6 and at the diaphragm. Dysphagia is produced when an anteriorly projecting cervical osteophyte compresses the cervical esophagus at its immobile portion.[4] That dysphagia could be caused by compression of the esophagus above C6 is contended because the esophagus proper commences at the level of the cricoid cartilage, C6.[5]
2. Osteophytes at the level of C3-4 prevent the normal retroversion of the epiglottis over the laryngeal inlet during swallowing.[6]
3. Cervical osteophytes cause inflammation in the surrounding tissues, parapharyngitis, and paraesophagitis, causing subsequent fibrosis and adhesions.[4] The mobility of the esophagus is diminished and may be a contributing factor in the development of dysphagia.
4. Ossification of the posterior longitudinal ligament may be an associated factor in the development of a large anterior osteophyte and later dysphagia.[7]
5. Cricopharyogeal spasm secondary to periesophagitis caused by an anterior osteophyte might be an additional factor.[8]

Osteophytes causing symptoms most commonly occur at the C5-6 level (40%) followed by C4-5 osteophytes (23%) with 8% of the surgical patients requiring surgical correction.[9] The two patients described above had large anterior cervical osteophytes at the level of C4-5. In our patients the size of the osteophytes may have been the most significant factor contributing to the development of dysphagia, and the resection of these large osteophytes led to a complete recovery of function. Most patients with periesophageal inflammation and cricopharyngeal spasm are expected to improve with mild sedation, anti-inflammatory medication, and muscle relaxants. Surgery is usually reserved for patients with severe symptoms or those who fail to improve with conservative management. Three approaches to the cervical spine have been described for the resection of the osteophytes: 1) Anterolateral extrapharyngeal approach for C2-7 osteophyte,[4] 2) posterolateral extrapharyngeal approach for osteophytes above

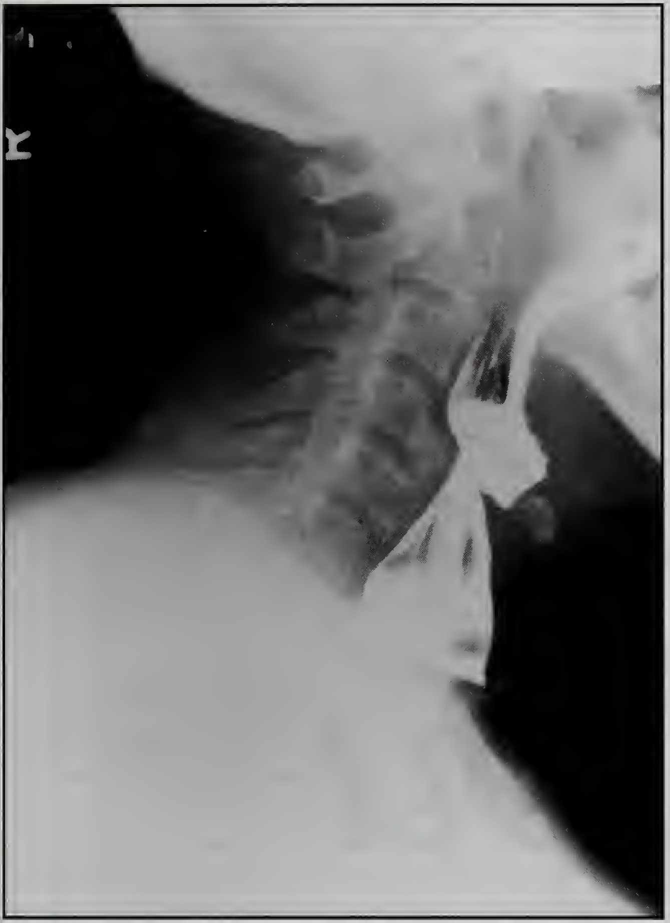

Figure 3.—Hypopharyngeal indentation by a large osteophyte at C4-5 level is visualized on barium swallow studies.

C3, and 3) transoropharyngeal approach for osteophytes between C1-C4.[10] In both our patients, an anterolateral extrapharyngeal approach was used to resect the osteophytes. There were no intra- or postoperative complications from this approach.

Cervical osteophytes are a rare cause of dysphagia. Hence, initial examination of the patient should be directed toward other common causes of dysphagia, and must include a radiographic and endoscopic evaluation. Extreme caution must be exercised during endoscopy to avoid esophageal perforation. In elderly patients and those with abnormalities of the cervical spine a high index of suspicion must be entertained in ruling out the large anterior cervical osteophyte as the cause of dysphagia.

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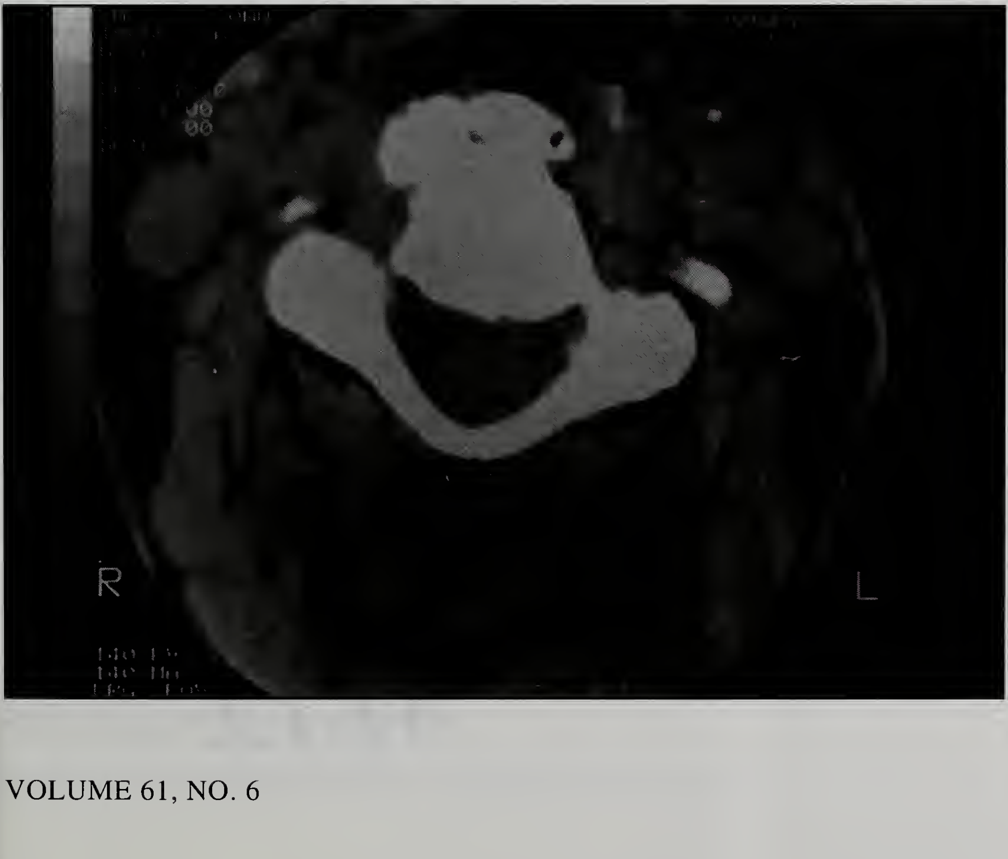

Figure 4.—A computed tomographic scan of the neck also demonstrates indentation of hypopharynx by a large cervical osteophyte.

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Preoperative Pulmonary Function Tests Do Not Predict Outcome After Coronary Artery Bypass

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ABSTRACT—*Purpose.*—To evaluate the utility of preoperative pulmonary function tests in predicting postoperative complications and lengths of stay after coronary artery bypass grafting.

***Methods.*—Medical records of 193 consecutive patients who underwent coronary artery bypass grafting from October 1993 to September 1994 were reviewed. Preoperative pulmonary function tests, comorbid conditions, smoking history, postoperative complications, and total days in the intensive care unit, hospital, and on mechanical ventilation were abstracted. Data were analyzed using linear regressions, analyses of variance, and nonpaired Student's *t* tests.**

***Results.*—Pulmonary function tests were normal in 56 subjects (29%, group 1), mildly impaired in 72 (37%, group 2), and moderately impaired in 35 (18%, group 3). Thirty patients (16%) had no pulmonary function tests. Group 3 subjects were older (71) compared to groups 1 and 2 (63 and 65, $P<0.05$). There was no major difference in comorbid conditions or smoking status among the groups. All patients had atelectasis postoperatively. The most frequent postoperative complications were pleural effusions (43%), pulmonary edema or congestive heart failure (28%), and atrial fibrillation (35%). The repeat surgery rate was 3.6%. The mean length of hospital stay was 10.1±0.6 days, with 1.5±0.1 days of mechanical ventilation and 2.8±0.2 days of intensive care unit stay. Overall, pulmonary function tests had no predictive value for postoperative pulmonary and nonpulmonary complications, nor for durations of mechanical ventilation and intensive care unit stay. There was a trend toward increased length of hospital stay in patients with impaired pulmonary function tests (group 1 8.6±0.6, group 2 9.6±0.8, group 3 12.7±2.3 days, $P=0.09$) but this was consistent with random variation.**

***Conclusions.*—Preoperative pulmonary function testss were not useful in predicting postoperative outcomes in patients undergoing coronary artery bypass grafting.**

Abbreviations Used in Text
CABG = coronary artery bypass grafting
CPAP = continuous positive airway pressure
FVC = forced vital capacity
FEV_1 = forced expiratory volume in one second
PFTs = pulmonary function tests
MV = mechanical ventilation
ICU = intensive care unit

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THORACIC surgery is frequently accompanied by reduction of effective lung volume and a change in the breathing pattern which may contribute to atelectasis and other complications during the postoperative period.[1-4] In patients undergoing lung resections these predictable changes may prolong the need for postoperative mechanical ventilation, increase the frequency of pulmonary complications, and lengthen the total hospital stay, especially in patients with poor pulmonary reserve.[5-12] Preoperative pulmonary function tests (PFTs) can accurately identify those with reduced or marginal pulmonary reserve, and

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currently serve as a screening tool in identifying patients suitable for lung resection.[5-10,13-20] Although there is no consensus regarding the predictive value of PFTs for cardiac surgery, many cardiothoracic surgeons routinely obtain preoperative PFTs for patients undergoing coronary artery bypass graft (CABG). In this study, we assess the predictive value of PFTs for postoperative complications, duration of mechanical ventilation (MV), and lengths of intensive care unit (ICU) and hospital stays in patients who underwent CABG in our hospital during a one-year period.

Methods

This is a retrospective cohort study undertaken at a 300-bed community teaching hospital of patients who underwent CABG between October 1994 and September 1995. These patients were identified using codes for discharge diagnoses, operative logs, and records of pulmonary function laboratory request forms. Medical records of these patients were obtained and information abstracted on selected variables using a uniform data abstract sheet specifically developed for this study. The variables included patient age, gender, weight, smoking status, co-morbid conditions, preoperative PFTs, dates of admission, transfer and discharge, duration of mechanical ventilation, postoperative complications, and intrahospital mortality.

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Preoperative pulmonary function testing, which was usually obtained within a month of scheduled surgeries, were performed by certified respiratory therapists at the hospital's pulmonary function laboratory and consisted of spirometry and arterial blood gas on room air. No subjects were denied surgery on the basis of PFT results.

All patients underwent cold potassium cardioplegic myocardial protection and were cooled to 28°C during the operations which were performed by a single team of cardiothoracic surgeons. Standard general anesthetic methods were employed during surgery after which patients were transferred to the ICU on mechanical ventilation.

Assessment for weaning from mechanical ventilation occurred approximately 12 hours after surgery. Patients who were judged suitable for weaning underwent reductions in the rate of intermittent mandatory breaths, and were given a brief trial of continuous positive airway pressure (CPAP) breathing. Patients who remained stable with favorable arterial blood gases after CPAP were subsequently extubated. Duration of mechanical ventilation was counted in days from the time the patient was received from the operating room.

Patients with PFT information were subdivided into three groups on the basis of the PFT abnormality. Group 1 included patients with normal PFTs, defined as forced vital capacity greater than 80% and forced expiratory volume in one second / forced vital capacity ≥75% of that predicted for each patient age, gender, and weight. Group 2 included patients with mild impairment: FVC of 65% to 80% predicted *or* FEV_1/FVC of 65% to 75% or both. Group 3 included patients with moderate or severe impairment: FVC and/or FEV_1/FVC <65%.

The data were analyzed using linear regression, analysis of variance, and nonpaired Student's *t* test assuming unequal variances where appropriate. Stratified analyses were used to evaluate the effect of potential confounders and to assess interaction of variables. Group 1 served as the reference for comparisons between groups. *P* values and 95% confidence intervals were computed where appropriate. Statistical significance was signified by a *P* value of less than 0.05.

Results

A total of 193 patients were identified as having had CABG during the study time period. These were predominantly male subjects (75%) and were between 39 and 84 years of age with a mean age of 66 years.

Baseline Characteristics.—Thirty patients had no preoperative PFTs. These were predominantly patients who required emergency CABG and/or were transferred from other institutions. Of the remaining 163 subjects with preoperative PFTs, 56 (34%) were categorized as group 1, 72 (44%) as group 2, and 35 (22%) as group 3 (see Table 1). Only three subjects (2%) had severe PFT abnormalities, defined as either FVC or FEV_1/FVC less than 50% and were added to group 3. There was no difference in age or gender between the combined group of subjects with or without PFTs. Group 3 subjects were significantly older (70.9±1.0) than group 1 (63.2±1.2) and group 2 (65.3±0.9). There was no significant variance in arterial blood gases or residual volume. Consequently, no further discriminative analyses were performed using these variables.

The major co-morbid conditions included hypertension, diabetes mellitus, congestive heart failure (CHF), and chronic renal failure. There was no significant difference in the distribution of these conditions by degree of PFT impairment (see Table 1). Similarly, there was no significant difference in the distribution of smoking status among the various categories of PFT impairment.

Postoperative complications.—There was no intrahospital mortality in the cohort. The main complications were predominantly pulmonary and cardiac (see Table 2). Almost all patients had some degree of radiological evidence of atelectasis in the immediate postoperative period. Eighty-four patients (44%) had pleural effusions, 67 (35%) had atrial fibrillation, and 54 (28%) had radiologic evidence of pulmonary edema or congestive heart failure. Very few of these were of clinical significance. The reoperation rate was 3.6% and was due mainly to bleeding. The incidence

Table 1.—Demographics and co-morbid conditions of 193 patients who underwent coronary artery bypass graft

	Normal (n=56)	**Mild (n=72)**	**Moderate (n=35)**	**No PFTs (n=30)**
Age	63.2±1.2	65.3±0.9	70.9±1.1*	67.7±1.8
Gender				
Male	43	57	24	22
Female	13	15	11	8
Smoking history				
active	14%	25%	23%	22%
ex-smoker	71%	42%	36%	26%
never	15%	33%	41%	52%
Diabetes mellitus	16%	28%	31%	20%
Chronic renal failure	3.5%	2.7%	5.7%	3.3%
Hypertension	61%	72%	54%	53%
CHF	16%	5.6%	11%	6.7%

Table 2.—Postoperative complication rates of 193 patients who underwent coronary artery bypass graft

	Normal (n=56)%	**Mild (n=72) %**	**Moderate (n=35) %**	**No PFTs (n=30) %**
Pulmonary				
Effusion	48.0	39.0	40.0	43.0
Pneumonia	1.7	4.2	8.6	5.7
Cardiac				
CHF/Pulmonary edema	21.4	20.8	60.0*	20.0
Atrial fibrillation	37.0	35.0	37.0	27.0
Ventricular tachycardia	1.8	2.8	2.8	3.3
Others				
Resurgery	3.6	4.2	5.7	0.0

*$P<0.01$

Table 3.—Lengths of stay *vs* the degree of pulmonary function test abnormality

Variable	**Normal (n=56) %**	**Mild (n=72) %**	**Moderate (n=35) %**	**No PFTs (n=30) %**
DMV	1.2±0.1	1.4±0.1	2.2±0.6	1.7±0.32
ICU Days	2.4±0.1	2.7±0.3	3.5±0.6	3.1±0.40
Postoperative days	6.6±0.3	7.0±0.4	9.7±1.9	7.7±0.64
Length of stay	8.6±0.6	9.6±0.8	12.7±2.2	11.4±0.93

*$P< 0.01$

Table 4.—Previous studies examining the utility of precoronary artery bypass graft pulmonary function tests

Study	**Design**	**n**	**Variable**	**Outcome**
Cain et al, 1976[21]	Retrospective	106	ICU days	Reduced flows associated ↑with days
Braun et al, 1978[2]	Retrospective	19	Pulmonary complications	Negative
Ingersoll et al, 1991[22]	Prospective	47	DMV	Negative
Durand, et al, 1993[23]	Retrospective	147	ICU days, DMV, mortality	Negative
Spivack et al, 1996[24]	Prospective	513	DMV, ICU days, mortality	Negative

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of pulmonary edema or congestive heart failure was highest among group 3 patients due in part to the higher mean age in this group. Adjusted for age, this difference was not statistically significant. There were no significant differences in the incidence of pleural effusion or pneumonia across the groups.

Lengths of Stay.—The duration of mechanical ventilation ranged from one to 19 days with a median of one day in the cohort as a whole. There was no difference across the various groups (see Table 3). Similarly there was no significant difference in the mean ICU stay across the groups (group 1, 2.4±1.0; group 2, 2.7±0.3; group 3, 3.5±0.6 days, $P<0.05$). Total hospital stay ranged from five to 85 days with a median of eight and a mean of 10 days. There was a trend toward increasing hospital stay with worsening categories of PFT impairment: 8.6±0.6 days in group 1, 9.6±0.8 days in group 2, and 12.7±2.2 days in group 3 ($P=0.09$) due mainly to prolonged post-ICU hospital stay in group 3. These differences were not due to any systematic difference in age or PFT abnormalities. Subgroup analysis stratifying patients by age and PFT abnormalities revealed no significant independent effect of age on lengths of stay. Also, there was no interactive effect of age and PFT abnormalities on length of stay. Neither the FVC nor FEV_1/FVC ratio was linearly associated with MV, ICU, or hospital stays (see Figures 1 and 2).

Discussion

This study demonstrates that preoperative pulmonary function tests do not predict postoperative complications or durations of mechanical ventilation, ICU stay, or hospital stay among patients who are otherwise candidates for CABG. The strengths of this study include its relatively large sample size, the use of a complete cohort of consecutive CABG patients, and the use of a uniform data abstraction tool. Nonetheless, interpretation of these results should be tempered by consideration of the inherent limitations of the study. Although no patient was denied CABG on the basis of PFT results, the negligible proportion of subjects with severe PFT impairment (only three patients had either FVC or FEV_1/FVC ratio less than 50%) suggest the cohort was a highly selected one. Thus, it is arguable that current selection criteria employed by cardiac surgeons excluded subjects with severe clinical pulmonary disease who might otherwise have required prolonged intubation and hospital stay with its attendant complications. Also, it is probable that abnormal PFTs combined with other potential predictors of surgical outcome, such as perioperative myocardial infarction and poor left ventricular function,[24] will have a better predictive value than each variable alone.

The negative findings of this study are unlikely to be accounted for by chance or differences in distribution of potential confounders across groups. The sample size was

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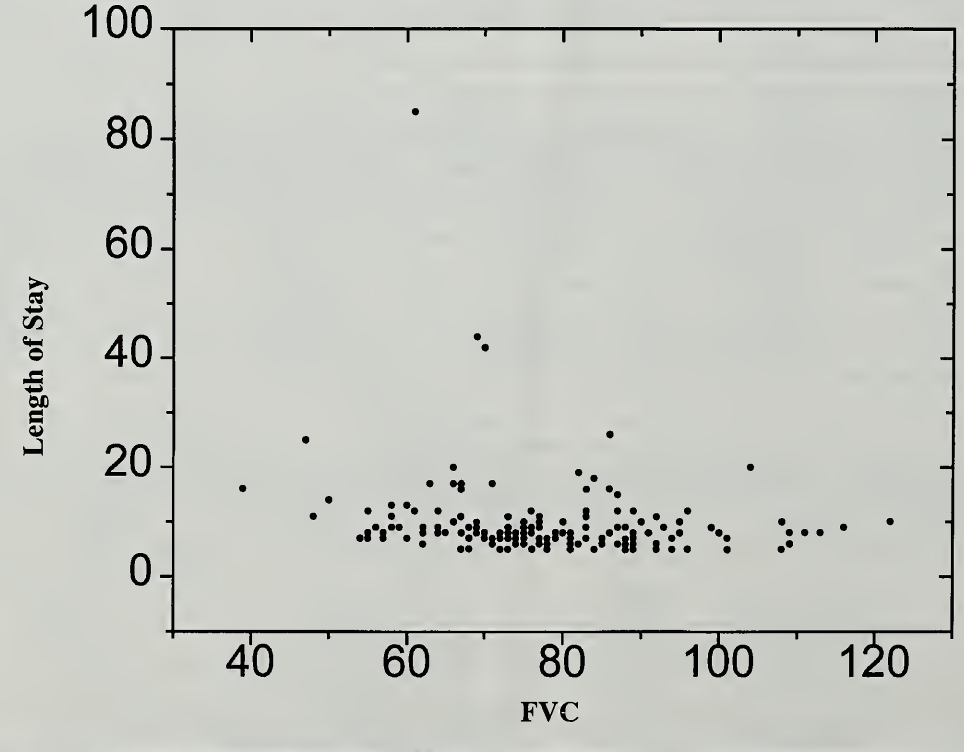

Figure 1.—Length of stay (ordinate) was not correlated with forced vital capacity (abscissa). (Forced vital capacity is plotted as percentage of normal values.)

sufficiently large to detect significant differences in the most common postoperative complications and in the lengths of stay. There was no difference in the distribution of co-morbid conditions. Although the exact number of grafts, duration of surgery, and exact doses of anesthetics or sedatives were not adjusted for, it is unlikely that they were significantly different across the groups. Previous studies have failed to demonstrate an association with postoperative outcomes in CABG patients.[21,22,24] Furthermore, the care of patients during and after surgery was neither influenced by PFT results nor by the study hypotheses (which had not yet been formulated). Lastly, weaning procedures, although not formally studied, were likely uniform since one team managed all patients.

The negative findings of our study are consistent with previous studies that have attempted to identify associations between abnormal PFTs and postoperative outcomes in CABG patients (see Table 4). The first such study conducted by Cain et al retrospectively studied 106 patients after thoracic and vascular surgeries. They found that preoperative PFTs did not accurately predict length of ICU or hospital stays. However, in a subgroup analysis, patients requiring more than five days in the ICU demonstrated significantly lower preoperative FVC and FEV_1 than patients who stayed less than five days. Advanced age was also associated with greater risk of postoperative complications. Note, however that this study *did not* address only post-CABG patients.[21] Braun et al retrospectively studied 19 patients who underwent CABG and found no correlation between PFTs and postoperative complications.[2] Ingersoll and Grippi studied 47 patients undergoing elective cardiac surgery and found that preoperative pulmonary functions did not predict extubation outcomes.[22] Durand et al studied 147 patients undergoing cardiac surgery and found that PFT abnormalities did not predict prolonged postoperative recovery, increased ICU stay, duration of mechanical ventilation, or mortality (all $R<0.25$).[23]

During the preparation of our manuscript, Spivack et al published a series of 513 patients who were prospectively evaluated with preoperative spirometry, arterial blood gases, and echocardiogram and ventriculography before CABG. A variety of clinical factors, pulmonary functions, and arterial blood gases were *not* helpful in predicting postoperative outcomes. However, reduced left ventricular function was associated with a longer need for mechanical ventilation.[24] The findings of our study further supports the hypothesis that routine preoperative pulmonary function testing is unnecessary in patients undergoing CABG.

One additional unexpected finding in our study was the significantly higher proportion (75%) of males undergoing CABG in our hospital over a year. Previous studies

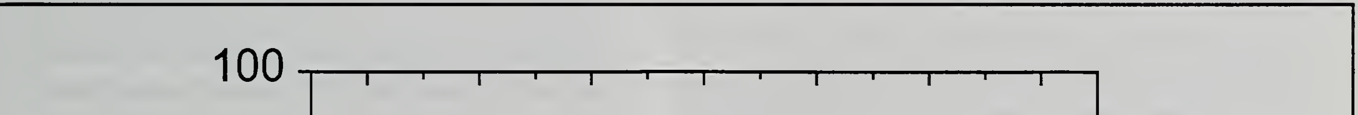

Figure 2.—Length of stay (ordinate) was not correlated with the FEV_1/FVC ratio (abscissa). FEV_1/FVC is plotted as percentage.

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have also suggested that women are less likely to be considered for invasive cardiac procedures.[25,26] It is impossible to say whether or at what point in the referral process gender bias may have occurred.

In conclusion, our study confirms that PFTs are not routinely required in patients undergoing CABG. Mild to moderate PFT abnormalities did not predict postoperative complications or length of stay. Since we had very few patients with severe PFT abnormalities, we cannot entirely discount the possibility that testing in such a subgroup of patients may be helpful in predicting outcome. However, there are no data to support this. If preoperative PFTs and blood gases had not been done, the cost savings for these 163 patients would have been approximately 40 thousand dollars.

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Life Threatening Pulmonary Embolus in a Factor V Leiden Carrier on Oral Contraceptives: A Case Report

MUHAMMAD WASIF SAIF, M.D., BRETT T. VOLPE, M.D., MARK DAILEY, M.D.,
AND GREGORY J. TSONGALIS, PH.D.

ABSTRACT—Venous thromboembolism is a serious, potentially lethal health problem affecting one per 1,000 people annually.[1-3] Major surgery, the use of oral contraceptives, complicated pregnancy, fractures, and immobilization increase the risk of thrombosis. In addition to these factors, thrombosis is associated with inherited deficiencies of antithrombin III, protein C, and protein S. Together these do not account for more than five to 10% of the cases.[3-6] Hereditary activated protein C resistance has been recognized as a basis for a majority of cases of familial thrombosis. It accounted for more than a 10 times higher number than that of other known genetic defects.[7] We describe a case of a young female who presented with a pulmonary embolism and was discovered to have activated protein C resistance. This patient had a heterozygous mutation for factor V Leiden and was taking oral contraceptives. This report underlines: 1) increased risk of venous thrombosis in oral contraceptive users who carry factor V Leiden mutation associated with functional resistance to the normal anticoagulation activities of protein C; 2) most episodes occurring in the young are minor, but pulmonary embolus can occur; 3) the importance of identifying other affected members of the family; and 4) the importance of anticoagulation prophylaxis at times of enhanced risk, particularly during pregnancy, postpartum, and major surgery.

Abbreviations Used in Text

APC = resistance and anticardiolipin abs
PCR = polymerase chain reation
RFLP - restriction fragment length polymorphism

Case Report

In November 1995, a 39-year-old obese white female, with no antecedent symptoms, presented with acute shortness of breath and chest pain. The patient was at rest watching television when she developed sudden onset of shortness of breath, followed by chest pain, palpitations, and diaphoresis. Chest pain was sharp and substernal in origin, radiating to the left shoulder and back, 7/10 in intensity with an increase in intensity with deep breathing. There was no history of cough, sputum, hemoptysis, nausea, vomiting, trauma to chest, or abdominal pain.

There was a past medical history of endometriosis for which she has been taking combined oral contraceptives (ethinyl estradiol and cyproterone acetate). She took no other medications. She works as an office clerk. She denied smoking, illicit drug use, or excessive alcohol use. Her family history was significant for her brother dying suddenly at age 30 of a probable pulmonary embolism. Her father died at age 55 following an acute myocardial infarction. She has no other siblings. The review of systems was unremarkable except for a history of panic attacks.

Physical examination revealed an obese woman with moderate tachypnea and a pulse rate of 124 per minute and blood pressure, 116/70 mm of Hg; respiratory rate, 30 per minute; and temperature of 38.3°C. Skin examination showed few purpuric patches over the legs. Her neck was

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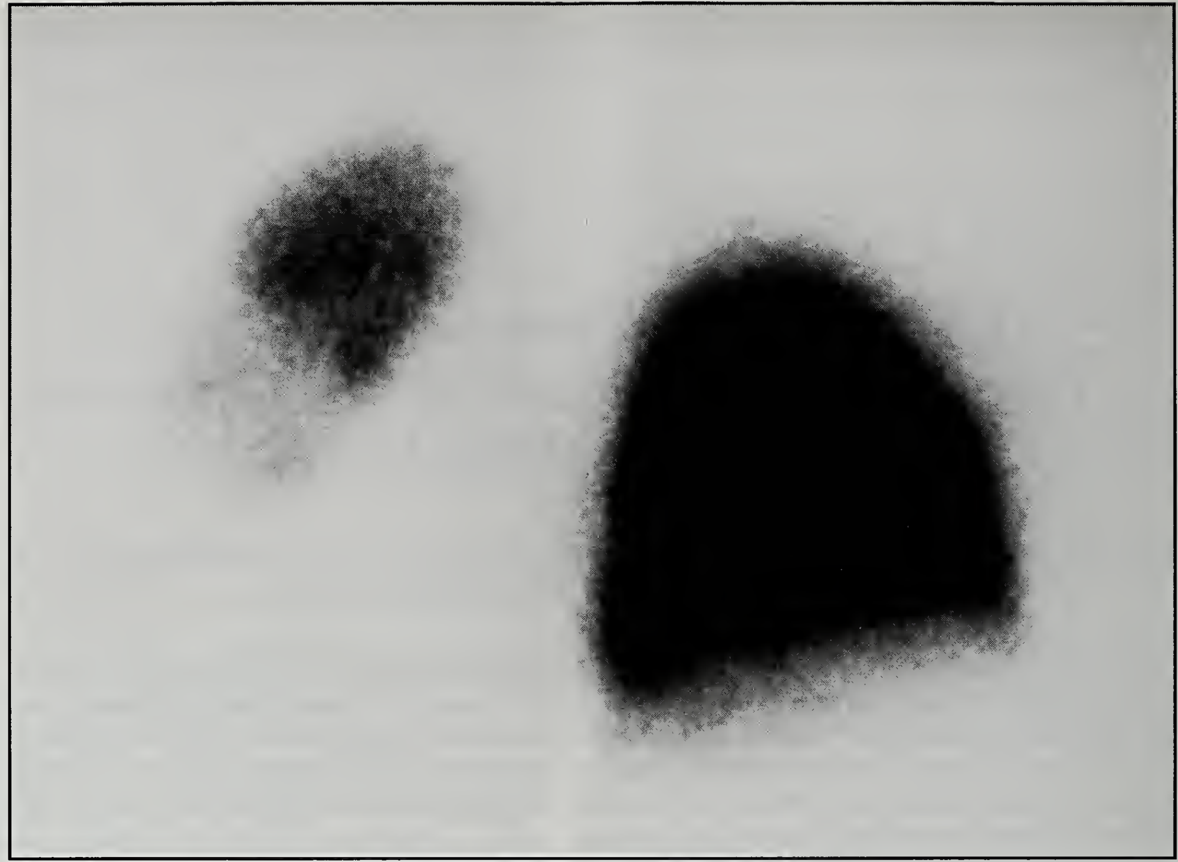

Figure 1.—Posterior projection of perfusion scan showing absence of perfusion to left lung.

supple with no raised jugular venus pulse, carotid bruit, no thyroid, or lymphnode enlargement. On auscultation she had a loud P_2 and no murmur or rub; there was crepitation in the right basal area. The abdomen was nontender and no visceromegaly was noted. Neurologically she was alert, oriented, and nonfocal. Peripheral pulses were normal and there was no pedal edema.

Admission Laboratory Tests

White blood cell count	13,000 mm^3
Hemoglobin	14 g/dL
Hematocrit	43%
Platelet count	258,000 mm^3
Sao$_2$	87.2%
Pco$_2$	32.3 mmHg
Po$_2$	53 mmHg
Bicarbonate	19 mEq/L
Creatine Kinase	181 U/L
MB fraction	8.3%
Lactic dehydrogenase	122 U/L

Her electrocardiogram showed deep S waves in I, pathologic Q waves in III, inverted T waves in III. A chest radiogram showed elevated right hemi-diaphragm and no infiltrate.

A ventilation-perfusion lung scan revealed a high probability of pulmonary embolism with absence of perfusion of the left lung and corresponding normal ventilation (see Fig. 1). Her echocardiogram showed enlarged right-sided chambers associated with pressure overload of the right ventricle and right ventricular hypokinesis, and nondilated borderline hypertrophied left ventricle with preserved contraction. Duplex venous examination of both legs demonstrated normal flow and normal response to compression and augmentation at the femoral and popliteal levels.

The patient was admitted to the intensive care unit; given intravenous streptokinase (1.5 million IU over 60 minutes) and intravenous heparin was started as a bolus of 5,000 IU, followed by a continuous rate of 1,200 U/hr to titrate activated partial thromboplastin time (aPTT) between 1 and 2.5 times the control value for seven days. Oral warfarin was initiated once the aPTT was therapeutic with an overlap period of three days and an international normalized ratio (INR) system of 2.0–3.0. Repeat lung perfusion image (after thrombolysis) revealed normal perfusion of both right and left lungs (Fig. 2). The patient was discharged on the 12th day on oral anticoagulant with follow-up at hematology clinic. Warfarin was then discontinued after three months.

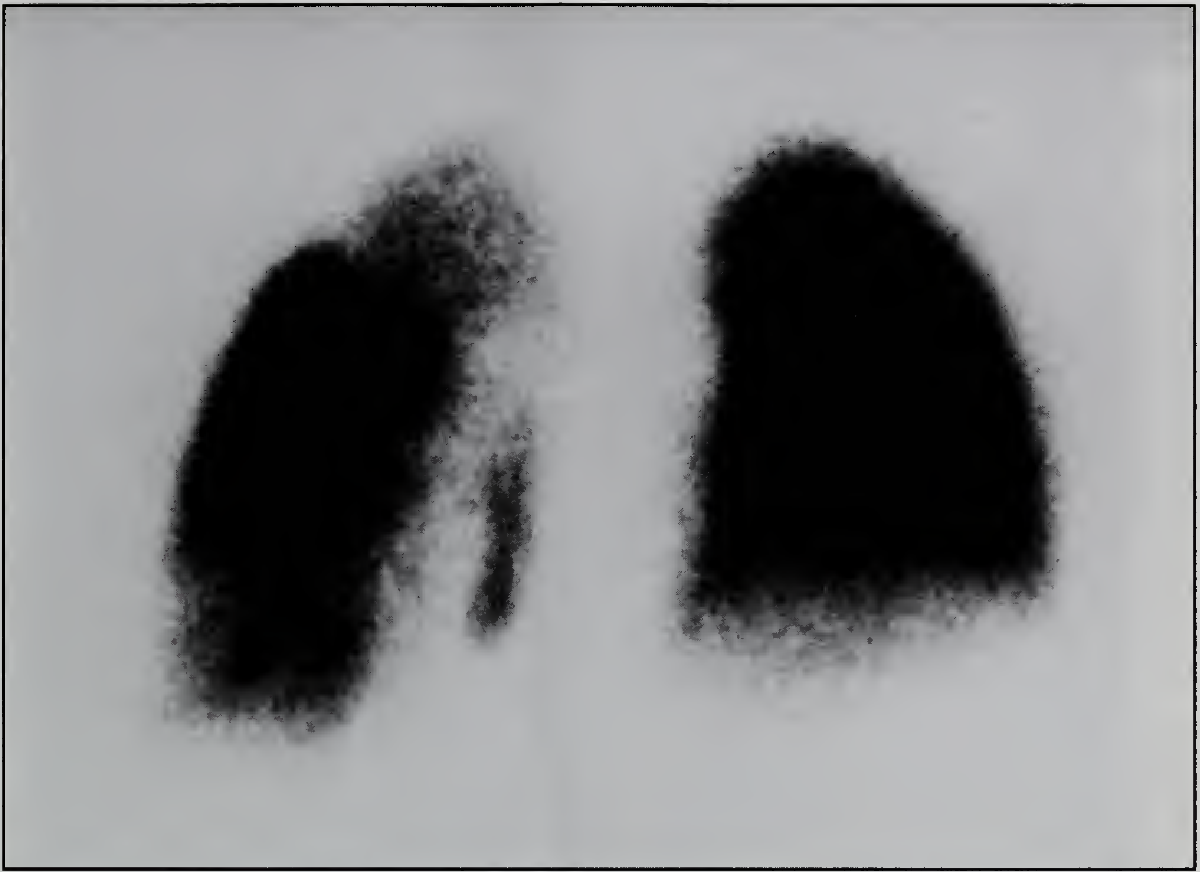

Figure 2.—Posterior projection of perfusion scan showing return of perfusion to the left lung after thrombolytic therapy.

Because of the possibility of inherited hypercoagulable state, a battery of tests was performed including:

Serial No.	Test	Results	Normal Values
1	Anticardiolipin antibody (ACA)		
	IgA	<10.0 = negative	<10.0 APL/mL
	IgG	<10.0 = negative	<10.0 GPL/mL
	IgM	<10.0 = negative	<10.0 MPL/mL
2	Circulating lupus anticoagulant	negative	negative
3	Antithrombin III	102%	88% to 126%
4	Serum homocysteine	8.6 μmol/L	5.1 to 13.9 μmol/L
5	Protein S	114%	57% to 120%
6	Protein C	93%	70% to 104%
7	Activated protein C resistance	2:3 ratio	<2.0 ratio

Molecular genetic analysis for activated protein C (APC) resistance (polymerase chain reaction [PCR]-mediated restriction fragment length polymorphism[RFLP] analysis for the factor V gene mutation) showed that the patient is heterozygous for the factor V Leiden gene mutation associated with activated protein C resistance (Fig. 3).

Discussion

This case demonstrates the increased risk of venous thromboembolic episodes in oral contraceptive users who carry the factor V Leiden mutation.

A number of plasma proteins function in harmony with cellular components to provide efficient hemostasis. A cascade of proteolytic events lead to formation of thrombin which activates factors V and VIII (to Va and VIIIa) in a positive feedback reaction, which then activates and aggregates platelets and converts fibrinogen into fibrin. Factor Va and VIIIa bind to negatively charged phospholipids exposed on activated platelets and serve as receptor sites for proteolytic enzymes, factors IXa and Xa.

In contrast, at sites of intact vasculature, binding of thrombin to the endothelial membrane protein thrombomodulin converts thrombin from a procoagulant into an anticoagulant protease, which activates protein C. APC inactivates the membrane bound factors Va and VIIIa by proteolytic cleavage which is potentiated by a cofactor protein, protein S. Procoagulant and anticoagulant mechanisms are balanced under physiologic conditions in favor

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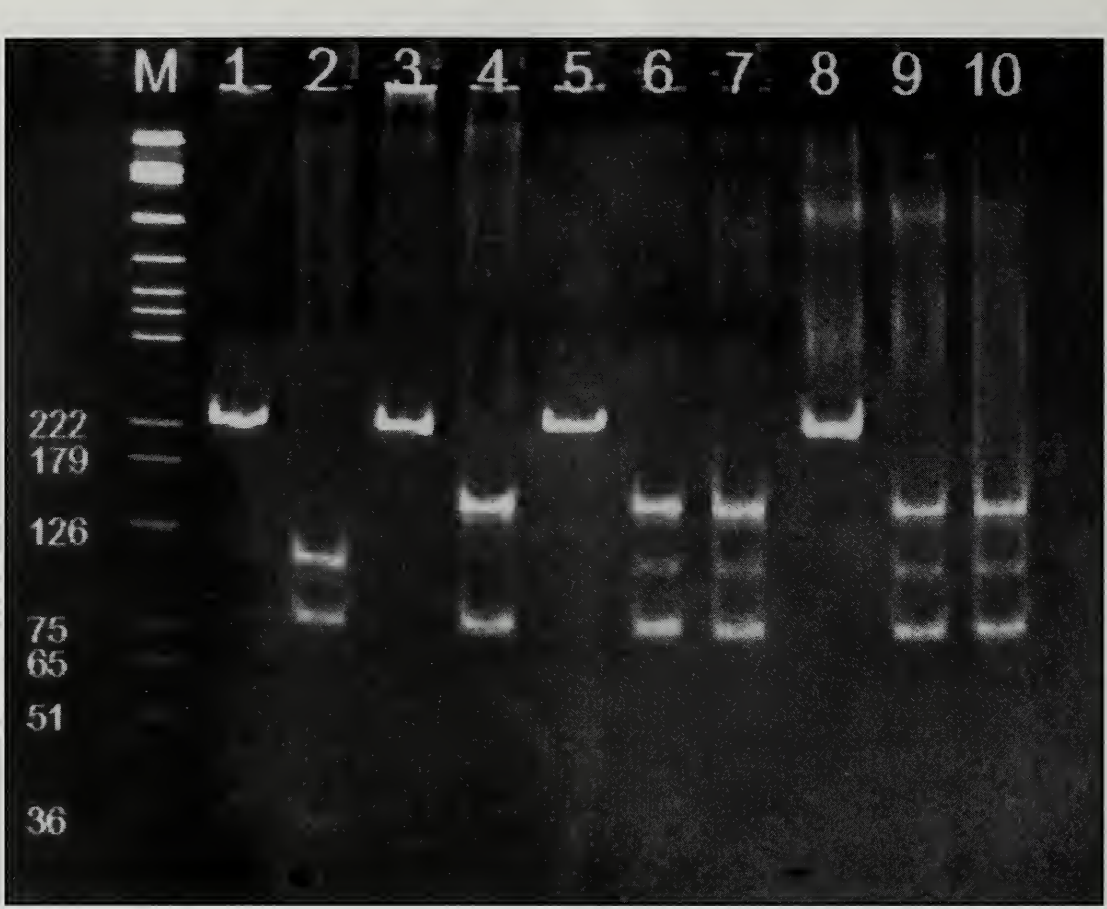

Figure 3.—Polymerase chain reaction (PCR)-mediated restriction fragment length polymorphism (RFPL) analysis for the factor V gene mutation associated with activated protein C resistance. Lanes 1,3,5,8, undigested PCR amplifed product; lane 2, normal control; lane 4 homozygous mutant control; lanes 6, 7, heterozygous controls; lanes 9,10, patient specimen (heterozygous). All PCR products were digested with the Mnl I restriction endonuclease M, molecular size marker.

of anticoagulation. It is thus evident that defects in this hemostatic system may be associated with a hypercoagulable state and an increased risk of thromboembolism.

Protein C is a vitamin K-dependent plasma protein (3-5 μg/mL) which binds to calcium and negatively charged phospholipids and circulates in plasma as a zymogen to a serine protease. APC resistance is caused by point mutation at a cleavage site in factor Va, which makes it inaccessible to APC. The presence of the mutant factor V Leiden gene at nucleotide position 1691, G-A transition has been determined leading to a replacement of arginine (A) with a glutamine (G).[8,9]

APC resistance is the most prevalent cause of thrombosis yet identified with a prevalence of 20% to 50%,[10] and a male-to-female ratio of 1:7.[11,12] The defect is inherited as an autosomal dominant. Studies showed 25% of relatives with APC resistance had suffered a thrombotic event by the age of 50.[11]

Heterozygous APC resistance inflicts a lifelong increased risk of thrombosis, especially when accompanied by other situations provoking thrombosis such as other genetic defects, protein C, protein S, and antithrombin III deficiency; or circumstantial factors such as surgery, oral contraceptives, or pregnancy. Carrying the factor V Leiden mutation and APC resistance leads to a 7- to 8-fold increase in risk of venous thrombosis. Use of oral contraceptives increase the risk up to 4- to 6-fold. Therefore, risk estimate is a cumulative 30-fold increase for oral contraceptive users who also carry the genetic risk. In other words, the combined effect of these risk factors seems to be multiplicative.[8,10]

Oral contraceptives enhance thrombogenecity by producing alterations of blood flow, including increased distendability of peripheral veins that results in venous stasis in the legs, and hence increased blood viscosity. The metabolic changes in the clotting cascade in women taking oral contraceptives include increasing concentrations of fibrinogen, factor V, factor VIII, and probably factor XII. The changes in coagulation are time-dependent, increasing with the duration of therapy and taking several months to resolve when use of oral contraceptives is stopped, and is probably related to estrogen dose. Moreover, a woman who starts taking oral contraceptives at a young age is at a higher risk of venous thrombosis if she carries the factor V Leiden mutation.[8,13-16]

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The high prevalence of the factor V gene mutation in the population, as well as the multiplicative effect when combined with oral contraceptives, raises the question of screening for APC resistance (eg, before surgery, during pregnancy, and particularly before the use of oral contraceptives). It is not clear at this stage how to propose a balance of advantages and disadvantages. Most episodes of venous thrombosis are minor, but our case developed a life-threatening pulmonary embolus while using oral contraceptives as therapy for endometriosis.[17,18]

Since heterozygosity for APC resistance poses a high risk for thrombosis, prophylactic anticoagulant therapy should be considered in situations provoking the likelihood of thrombosis.

Conclusion

This case is a reminder that the use of oral contraceptives in women with factor V Leiden mutation not only increases the likelihood of venous thrombosis but it can also occasionally be associated with a major event such as pulmonary embolus. The best precaution is to take a thorough personal as well as family history of thrombosis; APC resistance should be investigated in patients who present with venous thrombosis at a young age. Screening for the defect in other members of the family should also be considered. In addition, this case is a good example of incorporation of molecular medicine into everyday clinical practice.

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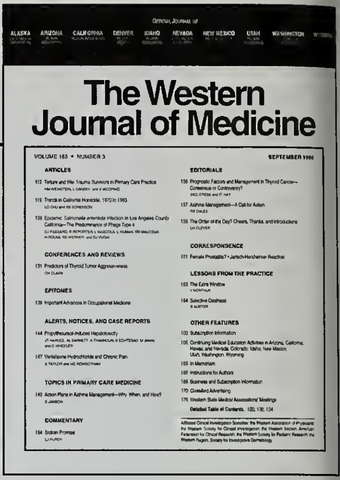

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EPITOMES OF PROGRESS

Important Advances in Clinical Medicine

Anesthesiology

Scott Kelley, M.D., Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in anesthesiology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Anesthesiology of the California Medical Association, and the summaries were prepared under the direction of Stephen H. Jackson, M.D., and the panel.

Laryngeal Mask Airway

THE laryngeal mask airway was developed in 1981 as an alternative technique for airway management during general anesthesia. It was designed to provide an end-to-end connection between the anatomical airway (larynx) and an external breathing system. Its safety and efficacy as a general-purpose airway have been well documented since its introduction into the United States in 1992. As clinicians have become experienced using the laryngeal mask airway for simple elective procedures, its role in more specialized and emergent procedures is expanding.

This airway is popular for the many ambulatory surgical procedures that do not require endotracheal intubation. The resultant avoidance of laryngoscopy and muscle relaxants reduces the potential for dental damage, sore throat, myalgias, residual muscle weakness, and nausea and vomiting. Although it was initially suggested to limit its use to cases of less than two hours in duration, in a growing number of reports, it is being used in cases exceeding four hours. The laryngeal mask airway can be used in 35% to 40% of a typical ambulatory surgery caseload; individual laryngeal mask airways can be reused more than 100 times. These factors, combined with decreased drug needs and costs, make this airway the most cost-effective airway management technique for patients not requiring endotracheal intubation.

The laryngeal mask airway has a definite role in the management of difficult airways. When faced with the "can't ventilate–can't intubate" scenario, there are several options: laryngeal mask airway insertion, double-lumen esophagotracheal tube insertion, transtracheal jet ventilation, or the establishment of a surgical airway. In any emergent situation, it is wise to "do what you do best." Laryngeal mask airway insertion is the only technique that anesthesiologists can use in routine practice, thus maintaining clinical competency. Once an airway is secured, fiberoptic bronchoscopy or intubation can be done through the device, if necessary, and a 6 mm-in-internal-diameter endotracheal tube inserted through sizes 3 and 4.

As clinicians have become experienced with the use of laryngeal mask airway in adults, its role in pediatric patients has also expanded. It is useful for neonatal resuscitation, diagnostic fiberoptic bronchoscopy, and securing the airway in patients with craniofacial abnormalities (such as the Pierre-Robin syndrome) or those having laser surgery (the treatment of port-wine stains). Children having repeated diagnostic or therapeutic radiologic procedures often require general anesthesia; the laryngeal mask airway affords easy airway control without the potential for subglottic mucosal damage from multiple endotracheal intubations. The advantages of using this airway for magnetic resonance imaging include the lack of ferromagnetic components and the maintenance of spontaneous ventilation, thus avoiding the need for bulky anesthetic equipment.

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The safe use of the laryngeal mask airway for laparoscopic procedures or with positive pressure or controlled ventilation remains unverified. International experience suggests that it can be used successfully in these types of procedures, but further study is necessary.

A head and neck surgical procedure typically involves airway sharing between the anesthesiologist and surgeon. The standard laryngeal mask airway can be used in limited applications, but a reinforced laryngeal mask airway has recently been introduced into practice. This specialized airway features a longer, thinner, wire-wrapped tube portion that allows flexibility for better surgical exposure during dental extractions and maxillofacial procedures.

Ophthalmologic surgery is an area in which the laryngeal mask airway appears to be ideal for airway management. Studies have shown that its insertion does not cause the increases in intraocular pressure seen with laryngoscopy and certain muscle relaxants. Reduced coughing and straining on emergence and extubation of the airway are beneficial after a delicate intraocular procedure.

The primary contraindication to laryngeal mask airway use is in patients at increased risk of gastric aspiration, such as those with hiatal hernia, pregnancy, "full" stomach, intestinal ileus, or obstruction. Its use does not guarantee protection from aspiration. Other relative contraindications include decreased pulmonary compliance (one-lung ventilation, thoracic trauma, pulmonary fibrosis) and concurrent airway disease (tumor, abscess, inflammation, hemorrhage). This airway, however, has been used in many of these situations as a life-saving device when conventional airway management techniques have failed.

This airway is a device that is easy to use and provides an excellent airway in many clinical situations. The simplicity of the technique, however, is based on a thorough knowledge of proper insertion technique and strict adherence to testing and cleaning protocols. Clinical judgment and competency must always guide airway management decisions.

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Remifentanil: An Esterase-Metabolized Opioid

REMIFENTANIL is a new synthetic opioid that was recently approved for clinical use. Although chemically related to the other fentanyl congeners, remifentanil is structurally unique because of its ester linkages. Its ester structure renders it susceptible to hydrolysis by blood- and tissue-nonspecific esterases, resulting in rapid metabolism to essentially inactive products. Remifentanil thus constitutes the first true ultra-short-acting opioid for use as a supplement to general anesthesia.

Pharmacodynamically, remifentanil is a pure m receptor agonist with the same spectrum of primary and adverse effects as the other fentanyl congeners. Therapeutically, it can be used for its analgesic, sedative, and minimum alveolar concentration–reducing properties. Its side-effect profile includes respiratory depression, hemodynamic depression, muscular rigidity, nausea, vomiting, and pruritus. Both the therapeutic and toxic effects are reversible with the use of naloxone hydrochloride, although remifentanil is so short-acting that naloxone is unlikely to be needed during routine clinical use. Its potency is similar to that of fentanyl.

The unique aspect of remifentanil is its short-acting pharmacokinetics. Remifentanil's clearance is several times greater than normal hepatic blood flow, consistent with widespread extrahepatic hydrolysis by blood and tissue esterases. Several high-resolution studies in both volunteers and patients have confirmed its very-short-acting pharmacokinetic profile. Not surprisingly, because of its esterase metabolism, remifentanil's pharmacokinetics are not altered by hepatic or renal failure.

Remifentanil's context-sensitive half-time (CST1/2) is perhaps the most intuitively meaningful evidence of its short-acting pharmacokinetics. Its CST1/2 is short (about 4 minutes) and independent of infusion duration. This means that despite long infusions, drug concentrations will decline by 50% within about four minutes of stopping the infusion. Remifentanil is also a rapid-acting drug in terms of its onset of effect. Several studies have confirmed that the drug has a short latency to peak effect after the administration of a bolus that is similar to that of alfentanil hydrochloride.

A few precautions regarding the use of remifentanil deserve emphasis. Because of its short duration of action, an excessively rapid decline in analgesia can occur if the drug is not administered carefully. An undetected infusion pump malfunction, for example, could conceivably result in an unintended, rapid dissipation of the anesthetic state intraoperatively. A related disadvantage is that for a sustained effect, remifentanil must be administered by continuous infusion, a method of delivery that some practitioners may find inconvenient. Finally, because remifentanil is formulated with glycine, an inhibitory neurotransmitter, it is not approved for epidural or intrathecal use.

Although it is premature to predict exactly what role remifentanil will play in modern anesthesia practice, it could conceivably be used for any intravenous application for which the previously marketed fentanyl congeners are used. Remifentanil is obviously best suited for cases in which a rapid emergence from anesthesia is desirable. Outpatient surgery, neurosurgery, painful diagnostic procedures, or therapeutic procedures in an intensive care unit are just a few examples where the drug's short-acting pharmacokinetic profile might be exploited. It is possible that remifentanil may enable the creation of new, cost-saving clinical pathways. For example, it may be possible to define anesthetic techniques and surgical procedures in which selected patients may be able to bypass the postanesthesia recovery room. Widespread clinical use of remifentanil will be required before the theoretic advantages associated with a short-acting opioid can be confirmed.

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Advances in Spinal Cord Stimulation

SPINAL cord stimulation is a technique in which electrical stimulation is applied posteriorly to the spinal cord. It was first employed 30 years ago to manage chronic pain limited to several contiguous spinal segments. Although spinal cord stimulation is nondestructive and reversible, because of technical limitations, it did not gain wide acceptance until this decade. Recent improvements in equipment and in patient selection have decreased the risk of complications and improved efficacy.

Percutaneous placement now permits lead positioning without general anesthesia. Patients then provide important feedback during lead placement, enhancing the ability to locate the precise area of the cord responsive to stimulation. Percutaneous lead placement also permits a trial stimulation without committing the patient to incision for the introduction or removal of equipment.

Using pacemaker technology, internal pulse generators were developed for a totally implanted, self-contained system programmed externally. Alternatively, internal pulse receivers are implanted and powered by radiofrequency through a 7.6-cm (3-in) antenna above the skin, a system that does not require surgical intervention when the battery fails. Multilead systems allow the delivery of complex stimulation patterns for patients who are unresponsive to stimulation by a single lead. Flat, wide leads for more varied stimulation arrays and wider areas of coverage can be placed by laminectomy.

Patient selection is an essential component of managing pain syndromes with spinal cord stimulation. Patient suitability is assessed by psychometric testing, such as a specially adapted, validated version of the Minnesota Multiphasic Personality Inventory. A multidisciplinary patient evaluation and refined trial techniques allow a better prediction of which patients are likely to benefit from the procedure.

Spinal cord stimulation is also an effective adjuvant to standard therapies for refractory angina pectoris. Epidural leads are placed near T-1, and stimulation produces paresthesias in the aching area. Spinal cord stimulation substantially improves exercise capacity and quality of life while reducing the number of anginal attacks, ischemic electrocardiographic signs, and nitrate consumption. There is no evidence that it conceals the signs of acute myocardial infarction. In Europe, this technique is a routine supplement to conventional medical and surgical therapies for angina.

Similarly, spinal cord stimulation produces an anti-ischemic effect in peripheral arterial and severe vasospastic disease of the limb, including that of patients refractory to standard medical and surgical therapies. Patients with residual vascular compliance are most likely to respond to the procedure. In patients with peripheral vascular disease, spinal cord stimulation may increase exercise tolerance, aid in the healing of ischemic ulcers, and increase microvascular flow. Despite this, the primary target of spinal cord stimulation therapy in the United States in patients with peripheral vascular disease remains the management of pain associated with the disease.

In summary, pain from ischemic vascular diseases and chronic pain from syndromes such as the failed back, phantom limb, and complex regional pain syndrome I (reflex sympathetic dystrophy) can be effectively managed with spinal cord stimulation. To date, there have been

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about 100,000 implantations of spinal cord stimulation. It is likely that the use of the procedure will increase in the future because of improved efficacy and the increased number of applications.

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Use of β-Blockade to Prevent Death After Noncardiac Surgery

IN the United States each year about 30 million patients have noncardiac operations. Of these, about one million have diagnosed coronary artery disease, two to three million have two or more major risk factors for coronary artery disease, and another four million are older than 65. Despite advances in the diagnosis and treatment of coronary artery disease, the perioperative morbidity and mortality in this group remain high. The incidence of intraoperative ischemia is between 20% and 63%, and that of postoperative infarction can be as high as 37% with an associated mortality of 40% or higher. Of all possible predictors of an adverse outcome, postoperative ischemia has been identified as the most important, conferring a ninefold increase in the odds of having cardiac death, myocardial infarction, or unstable angina and a twofold risk of long-term sequelae. Thus, efforts at reducing adverse cardiac outcomes have concentrated on the preoperative evaluation and on reducing the incidence of postoperative ischemia.

In a number of studies, the effects of techniques for reducing perioperative myocardial ischemia, a possibly reversible cardiac risk factor, have been examined: anesthetics, postoperative sedation, prophylactic nitrates, calcium channel blockers, and β-blockers. Of these, intensive postoperative sedation, β-blockade, α_2-agonists, and adenosine analogues have shown reductions in the incidence or severity of perioperative myocardial ischemia. Until now, however, none of the clinically available therapies have shown a difference in mortality.

Recently a 200-patient, randomized, placebo-controlled, clinical trial showed that the prophylactic perioperative administration of atenolol reduced mortality after discharge from the hospital. The major reduction in the number of deaths from cardiac causes occurred during the first six to eight months (0% *vs* 8%, $P < .001$). Moreover, mortality during the first postoperative year (3% *vs* 14%, $P = .005$) and two years (10% *vs* 21%, $P = .019$) was also reduced. Cardiovascular event-free survival during the two-year follow-up was improved by the perioperative administration of atenolol (68% *vs* 83%, $P = .008$). This study is important because it provides a simple, safe, inexpensive therapy for preventing perioperative myocardial ischemia and also reducing mortality. Before this study, risk factor identification followed by coronary revascularization was the only option. Patients who were found to require coronary revascularization before a noncardiac operation incur the risk of two operations rather than a single one. Now a medical regimen can reduce the morbidity and incidence of cardiac death that can be associated with noncardiac surgical procedures.

Who should receive prophylactic perioperative β-blockade? Any patient who is already on b-blockade therapy should continue to receive it. In addition, any patient qualifies who has known coronary artery disease as shown by a previous myocardial infarction, typical angina, or atypical angina with electrocardiographic changes indicating ischemia in response to exercise or scintigraphic evidence of a myocardial perfusion defect. Moreover, any patient qualifies who is at risk for coronary artery disease because of previous or current vascular operations or the presence of at least two of the following risk factors (in addition to male sex): age 65 years or older, hypertension, current smoking, serum cholesterol level of 6.20 mmol per liter (240 mg per dl), or diabetes mellitus. Who should not be given prophylactic perioperative β-blockade? Anyone with a known sensitivity to β-blockers, acute congestive heart failure, acute bronchospasm, third-degree heart block without a pacemaker, a heart rate below 55 beats per minute, or a systolic blood pressure below 100 mm of mercury should not receive this therapy. Care should be taken when administering it to patients with a history of asthma.

What types of operations qualify for prophylactic perioperative β-blockade? All patients scheduled to undergo a major noncardiac operation requiring general anesthesia and a hospital stay qualify. It is unclear if patients scheduled for minor operations should receive this therapy.

How long does a patient need to be on prophylactic perioperative β-blocker therapy? Patients were administered atenolol for seven days postoperatively. Episodes of myocardial ischemia are most frequent during the first 48 hours postoperatively, but can continue for at least seven days. The optimum duration of therapy is unknown, but

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seven days should be considered a minimum. Furthermore, patients with a known history of coronary artery disease may benefit from indefinite β-blockade.

What drug should be used? Atenolol was chosen because it was a long-acting drug that had proven efficacy in preventing death after myocardial infarction. Other drugs such as metoprolol tartrate have similar efficacy. It is unclear if a short-acting drug such as esmolol hydrochloride would have similar effects. Notably, the use of esmolol would increase the cost and complexity of administration. How should the drug be administered? An intravenous dose of atenolol of 5 mg to 10 mg should be administered 30 minutes before the surgical procedure while monitoring the blood pressure and heart rate. A second dose of 5 mg to 10 mg of intravenous atenolol should be administered postoperatively. If the patient is not to take food or liquids orally, intravenous administration should be continued twice a day. Once the patient is able to take oral medications, oral atenolol, 50 mg or 100 mg, with the dosage guided by the heart rate and blood pressure, can be used. It is important to continue administering the b-blocker for a full seven days postoperatively. It is unclear if an oral dose of atenolol given in the immediate preoperative period will be adequately absorbed in time to provide optimal protection.

The difficulty with adopting prophylactic perioperative β-blockade for patients at risk for perioperative cardiac morbidity and mortality will be the postoperative administration of the drug. This therapy requires prolonged b-blockade to prevent postoperative myocardial ischemia. It will be important to convince our surgical colleagues to continue this therapy into the postoperative period. The clinical practice of avoiding postoperative β-blockade so that tachycardia can guide volume replacement is clearly detrimental to the long-term survival of patients at risk for cardiac morbidity. Controlling hemodynamics during the operative and postoperative period is critical to avoiding perioperative cardiac morbidity and death.

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'Practice Guidelines for Blood Component Therapy' Summarized

DESPITE the decreasing potential for blood components to transmit viral disease, remaining concern (and concern regarding other possible complications: transfusion reactions, the transmittal of bacterial or parasitic diseases, immunosuppression, and cost) has prompted several professional societies and governmental organizations and regulatory bodies to produce "guidelines," "strategies," and "practice parameters." These documents have not addressed the specific needs of anesthetized patients, however. The American Society of Anesthesiologists responded to this need by convening a task force in 1994 that produced an evidence-based document, "Practice Guidelines for Blood Component Therapy." The panel included community- and university-based anesthesiologists, representatives from other specialty organizations, and a methodologist. After review of the relevant English-language literature as of mid-1994, the task force graded the evidence based on a standardized system and recommended the following for adult surgical and obstetric patients. The task force emphasized that "transfusion decisions should be based on sound physiologic principles and a comprehensive assessment of the patient's risk factors" (*WJM*, March 1997:742).

Erythrocyte Transfusion

- Erythrocyte transfusion is rarely indicated when the hemoglobin concentration is greater than 100 grams per liter (10 grams per dl) and is usually indicated when it is less than 60 grams per liter (6 grams per dl).
- Its use should be based on the patient's risk for complications of inadequate oxygenation (cardiac or pulmonary reserve; hemodynamic indices; rate and magnitude of actual and anticipated blood loss; oxygen consumption, as affected by disease states, temperature, sepsis, muscular activity, and drugs administered; atherosclerotic disease) when the hemoglobin concentration is 60 to 100 grams per liter (6 to 10 grams per dl).
- The use of a single "transfusion trigger" for all patients is not recommended.
- The task force encouraged measures to decrease blood loss and methods to avoid allogeneic transfusion—for example, preoperative autologous donation, hemodilution.

In an accompanying editorial, it was suggested that whole blood be transfused in preference to packed red cells when blood loss of one blood volume is anticipated or occurs.

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Platelet Transfusion

- Prophylaxis for major surgical procedures is rarely indicated when thrombocytopenia is due to increased platelet destruction. It is rarely indicated when thrombocytopenia is due to decreased platelet production when the platelet count is 100×10^9 per liter or more and is usually indicated when the platelet count is less than 50×10^9 per liter. Prophylaxis should be based on the risk of bleeding (site of operation: ability to control hemorrhage and the local consequence of bleeding) for platelet counts of 50 to 100×10^9 per liter.
- Therapy should be instituted only in patients with microvascular bleeding: surgical and obstetric patients usually require platelet transfusion if the platelet count is less than 50×10^9 per liter and rarely require platelet transfusion if it is 100×10^9 per liter or more. The transfusion of platelets for patients with platelet counts of 50 to 100×10^9 per liter should be based on the risk of additional bleeding. Vaginal deliveries may be undertaken in patients with platelet counts of less than 50×10^9 per liter. Platelets may be administered to patients with known platelet dysfunction and microvascular bleeding.

Indications for Fresh Frozen Plasma

Fresh frozen plasma is indicated for the urgent reversal of warfarin sodium therapy, the correction of known coagulation factor deficiency(ies) for which specific factor concentrate(s) is not available, the correction of microvascular bleeding in the presence of an elevated (>1.5 times mean normal) prothrombin time (PT) or partial thromboplastin time (PTT), and the correction of microvascular bleeding due to coagulation factor deficiency in patients tranfused more than one blood volume and when the PT and PTT cannot be measured in a timely manner.

Cryoprecipitate Transfusion

Cryoprecipitate transfusion is recommended for prophylaxis in nonbleeding perioperative or peripartum patients with congenital fibrinogen deficiency or von Willebrand's disease that is unresponsive to desmopressin acetate, for bleeding patients with von Willebrand's disease, and for the correction of microvascular bleeding in massively transfused patients with fibrinogen concentrations of less than 0.8 to 1.0 grams per liter (80 to 100 mg per dl) (or when fibrinogen concentrations cannot be measured in a timely manner). It would appear that this last circumstance is likely to result in multiple factor deficiencies with a concomitant need for large intravascular volume replacement and thus would usually be treated with fresh frozen plasma.

These "guidelines" differ from those in previous documents in several ways. They were produced with a specific evidence-based methodology. They allow for a greater latitude of professional judgment than do some other guidelines, and they recognize the urgency and imperatives that sometimes accompany the need for therapy during surgical or traumatic blood loss.

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Department of Public Health Issues Regulations on the Recognition and Transfer of DNR Orders

JEANETTE C. SCHREIBER AND MAUREEN WEAVER

Introduction and Background

THE Department of Public Health (the "Department") has issued regulations governing Do Not Resuscitate (DNR) Bracelets and the transfer of DNR Orders between health-care institutions. The Department's regulations (the "Regulations"), which became effective on 30 December 1996, establish a statewide system for recognizing and honoring DNR Orders during institutional transfers and upon intervention by emergency medical services personnel.[1] The Department's Office of Emergency Medical Services (OEMS) developed and will oversee implementation of the Regulations.

I. *Brief Overview.*—Key elements of the Regulations are as follows:

The Regulations.

- apply to Connecticut-licensed physicians, health-care institutions, and EMS personnel, and, potentially, to all patients who have DNR Orders;
- permit patients with DNR Orders to obtain DNR Bracelets based on orders from their physicians;
- permit DNR Orders written and signed by Connecticut-licensed physicians to remain in effect during the patients' transfers between health-care institutions and between homes and health-care institutions;
- describe procedures for the use of DNR Transfer Forms and DNR Bracelets for patients who wish that a DNR Order remain in effect during a transfer;
- require health-care institutions and EMS providers to honor DNR Orders transmitted by DNR Transfer Forms and DNR Bracelets in accordance with the new system; and
- require attending physicians to assist their patients with DNR Orders in obtaining DNR Bracelets if requested and require health-care institutions to offer DNR Bracelets to patients with DNR Orders being discharged home.

II. *Details on Regulations.*

A. *DNR Orders, DNR Transfer Forms, and DNR Bracelets.*—The new system involves the use of three principal components: (i) DNR Orders; (ii) DNR Transfer Forms; and (iii) DNR Bracelets. This section describes the requirements stated in the Regulations for these items. The next sections explain how DNR Transfer Forms and DNR Bracelets are to be used to transmit DNR Orders for individuals in the community and for patients being transferred between health-care institutions.

DNR Order:

- The new system is based upon the existence of a valid DNR Order written and signed by a Connecticut-licensed physician for a particular patient.
- The Regulations define procedures for the transfer of DNR Orders but do not specify any clinical criteria for the issuance of DNR Orders. Therefore, existing facility policies and procedures for advance directives and DNR Orders should be followed.
- Physicians may be requested more frequently to write DNR orders in their offices for patients who wish to obtain a DNR bracelet. An office protocol may be helpful for documenting the patient's medical condi-

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tion and informed consent of the patient or authorized representative or use of an appropriate advance directive.

- A DNR Order written for a patient by a Connecticut-licensed physician may be transmitted during transfers between licensed health-care facilities by a DNR Bracelet or a DNR Transfer Form; in all other circumstances (eg, a transfer from home to a hospital) only the DNR Bracelet may be used.
- A DNR Order may be revoked at any time by the patient or the patient's authorized representative.[2]

DNR Transfer Form:

- The DNR Transfer Form is a new document. OEMS has developed a standard DNR Transfer Form and is distributing the form to licensed health-care institutions. DNR Transfer Forms are used for a patient whose DNR Order is to remain in effect during a transfer from one institution to another (eg, from a hospital to a nursing home).
- Health-care institutions may use an original or copy of the DNR Transfer Form.

DNR Bracelet:

- The new system permits the use of a DNR Bracelet to transmit a DNR Order during a patient's transfer between health-care institutions and between home and a health-care institution.
- *Only approved DNR Bracelets may be used.*—A DNR Bracelet must (i) be of a design approved by the Department, (ii) display the patient's name and the patient's attending physician's name, (iii) be affixed to the patient's wrist or ankle, and (iv) not have been cut or broken at any time.
- *How to obtain a DNR Bracelet.*—A patient with a DNR Order, or the patient's authorized representative, may obtain a DNR Bracelet from any "designated agency," including a health-care institution or a Connecticut- licensed physician, based on a written order from the patient's attending physician. DNR bracelets may be ordered by providers from the Connecticut College of Emergency Physicians (CCEP).
- *Continued recognition of previous orange bracelets.*—The new orange bracelets are essentially identical to those in use under the pilot orange bracelet program, and orange bracelets placed on patients through the pilot program will continue to be valid and effective.
- *Required assistance by attending physicians.*—The statute authorizing the Regulations requires that if requested, the physician who issued the DNR Order must assist the patient or the patient's authorized representative in obtaining a DNR Bracelet. The Regulations require an attending physician who has issued a DNR Order to provide information on how to obtain a DNR Bracelet if the patient or patient's authorized representative requests it. If the patient is unable to obtain a bracelet from any other source, the attending physician must obtain one and provide it to the patient.
- *Required assistance by health-care institutions for patients discharged home.*—When a patient has a DNR Order that is to remain in effect after discharge from a health-care institution to home, the health-care institution must offer a DNR Bracelet to that patient prior to discharge.

B. *Use of DNR Bracelets to Recognize DNR Orders for Individuals in the Community.*—The Regulations expand the ability of individuals in the community (ie, outside health care facilities) to avoid cardiopulmonary resuscitation (CPR) during emergency medical treatment.

- Since 1991, OEMS has utilized a pilot program that became known as the "orange bracelet protocol" for terminally ill patients in the prehospital setting. Under this protocol, terminally ill individuals with DNR Orders from their physicians could obtain a standard orange "DNR bracelet"; EMS providers responding to emergency calls for such individuals would then recognize that a DNR Order was in place for the individual and, in consultation with medical direction, would not initiate CPR.
- Unlike the "orange bracelet protocol," the new Regulations are not restricted to patients with a terminal diagnosis. Thus, for example, a competent frail elderly person in the community who is not terminally ill but who would like to have a DNR Order recognized can now obtain a DNR Bracelet based on the order of his/her physician.
- The DNR Bracelet must be recognized and honored by EMS providers as well as by health-care institutions until admitting orders are written in accordance with the institution's policies. The Regulations provide that DNR patients under the care of EMS providers shall be given medical care determined as a result of the EMS providers' consultation with medical direction, within the limits of the DNR Order.
- When a patient is transferred from home to a health-care institution, the DNR Bracelet is the only valid means of transferring the DNR Order. The DNR Transfer Forms are only meant for transfers between health care facilities.

C. DNR Orders and Interfacility Transfers.—In order to carry out the requirements of the Regulations, the following procedures should be followed during a patient's transfer between health-care institutions (eg, between a hospital and a nursing home). Facilities should amend their existing DNR policies to incorporate these procedures:

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For the Transferring Institution:

- *Confirm the existence of a written DNR Order.*—In order for a patient's DNR Order to apply during a transfer, there must be in place a DNR Order written and signed by a Connecticut licensed physician in accordance with the policies and procedures of the transferring institution.
- *Complete a DNR Transfer Form.*—Prior to the patient's transfer, the existence of the DNR Order must be documented at the transferring health-care institution on a DNR Transfer Form. The Form must be signed by the physician who entered the DNR Order or by a registered nurse who attests to the existence of the DNR Order. According to OEMS, if a patient is wearing a DNR Bracelet, there is no need to complete a DNR Transfer Form.
- *Send the completed DNR Transfer Form with the patient.*—The DNR Transfer Form or a legible copy should be sent with the patient at the time the patient is transferred to another health-care institution.
- *Show the DNR Transfer Form or DNR Bracelet to all EMS Providers.*—In addition, the health-care facility staff person who transfers care of the patient to the EMS providers must show the DNR Transfer Form or a legible copy or a DNR Bracelet to all EMS personnel involved in the transfer.

For EMS Providers:

- *Honor DNR Orders transmitted during the patient's transfer.*—Any EMS provider receiving a patient from a transferring health-care institution must honor the DNR Order transmitted by either a DNR Transfer Form (or a legible copy of the DNR Transfer Form) or a DNR Bracelet.
- *Show the DNR Transfer Form or DNR Bracelet to the Receiving Institution.*—The EMS provider must show the DNR Transfer Form (or a legible copy of the DNR Transfer Form) or a DNR Bracelet to a nurse or physician at the receiving health-care institution or, in the absence of a nurse or physician, to the person in charge of patient care.

For the Receiving Institution:

- *Honor the DNR Order.*—Any health-care institution receiving a patient with a DNR Transfer Form (or a legible copy of the DNR Transfer Form) or a DNR Bracelet must honor the DNR Order transmitted in this manner until such time as admitting orders are written in accordance with the receiving institution's policies.

D. Record Keeping Requirements.—The Regulations specify new record keeping requirements:

- *Retain the DNR Transfer Form in the patient's medical record.*—A DNR Transfer Form or a legible copy must be retained with the patient's medical record.
- *Maintain permanent record of DNR Bracelets.*—Physicians and health-care institutions must maintain a permanent record of DNR Bracelets issued, including a copy of the written DNR Order.

E. DNR orders for clients of the Department of Mental Retardation.—Important note: The Regulations do not limit the requirements for DNR orders for persons receiving services under the direction of the Commissioner of Mental Retardation.

F. Religious, philosophical, and ethical objections.—The Regulations state that health-care providers who have objections to implementing a DNR Order must turn care of the patient over without delay to another provider who will implement the DNR Order. Pending assumption of care by another provider, the DNR Order shall be followed.

Conclusion

The new DNR transfer regulations establish a relatively simple system that will enable providers to better honor patients' wishes regarding resuscitation. For further information concerning the system, contact the Department of Public Health Office of Emergency Medical Services (860-509-7975) or the Connecticut College of Emergency Physicians (860-349-2220).

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1. Regulations of Connecticut State Agencies §§19a-580d-1 to 19a-580d-9 were promulgated pursuant to Public Act No. 95-113, now set forth in Connecticut General Statutes §19a-580d.
2. Methods provided in the Regulations for revoking the DNR Order include (i) removing the DNR Bracelet from the patient's extremity or (ii) telling an individual licensed health-care provider or certified emergency medical technician. These persons must ensure that the revocation is entered in the patient's permanent medical record and must notify the attending physician or the physician who entered the order.

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Commentary

Carpal Tunnel Syndrome: The Significance of Electrodiagnostic Testing

It is universally accepted that carpal tunnel syndrome (CTS) can be manifested by symptoms and signs including, but not exclusively limited to, numbness, tingling, nocturnal paresthesias in the distribution of the median nerve, pain, weakness, loss of dexterity, positive Tinel's sign, positive Phalen's test, and thenar muscle atrophy. However, some physicians still have not accepted the need for electrodiagnostic studies (EDX) as a more exact and objective means for diagnosing carpal tunnel syndrome, establishing a quantitative baseline for determining improvement or disability, and detecting an unsuspected polyneuropathy. Only 60% of patients referred for EDX testing with the clinical diagnosis of carpal tunnel syndrome actually test positive, meaning that at least 35% of patients have another diagnosis, given the fact that 95% of positive carpal tunnel syndrome EDX studies are accurate. Electric studies are particularly pertinent in preventing patients, especially women, with repetitive strain injury (RSI) from undergoing unnecessary carpal tunnel surgery with its attendant risks and disabilities inherent in any surgical procedure, as well as the costs involved by the patients and employers. The cost-benefit ratio of preoperative EDX studies for CTS far outweigh the surgical risks to the patient and the financial loss to both patient and insurance company for unnecessary carpal tunnel surgery. There is no justification for relying solely on office clinical and subjective judgment without ever ordering preoperative EDX studies.

In 1972, Becker and Granger stated: "Since electric testing is the most objective means for establishing the diagnosis of carpal tunnel syndrome, it is indicated in all clinically suspected cases. Nerve conduction is a precise means for diagnosing CTS."[1] But in a recent publication in 1994, for example, the authors discredited preoperative EDX studies in patients with their exclusive clinical diagnosis of carpal tunnel syndrome (CTS).[2] Fifty percent of cases selected for carpal tunnel surgery had no preoperative electro-diagnostic studies, no clinical criteria were listed for the diagnosis of carpal tunnel syndrome, no preexisting factors were enumerated, and no coexisting diagnoses were listed. Theoretically then, 50% of these patients undergoing carpal tunnel release may have had a different diagnosis.[3]

Neurological symptoms of carpal tunnel syndrome may mimic multiple other conditions in the upper extremity including cervical radiculopathy, thoracic outlet syndrome, metabolic neuropathy, amyotrophic lateral sclerosis, and brachial plexus compression, just to name a few. Many physicians have had the occasion of making the diagnosis of carpal tunnel syndrome only to discover after reexamination or EDX study that their clinical impression was incorrect and that another condition was responsible for the symptoms mimicking carpal tunnel syndrome. One group of patients may present with paresthesias in the hand, either in the median or ulnar territory, more often at night than during the day, with occasional pain and clumsiness during the symptoms. This is a group with frequently-negative EDX studies for carpal tunnel syndrome but, after careful examination, demonstrate positive findings compatible with thoracic outlet syndrome.

Yet another large number of patients (and becoming even larger as the condition is more recognized) is the group with repetitive strain injury (RSI).[4] Keisler et al discussed RSI as an extreme illustration of how the social context of work and technical changes define and influence the nature of health complaints.[5] This is a growing problem which has received a great deal of academic interest with simultaneous discussion by lay people evidenced by many articles in newspapers and magazines.[6] In as-yet-unpublished data, we have analyzed over 50 referred cases of carpal tunnel syndrome in young women performing repetitive tasks and found 40% indeed were overuse syndromes including carpal tunnel syndrome, 40% were cases of RSI not amenable to surgery and all electronegative, and 20% of the cases were thought to have emotional causes for the symptoms. Other authors also have concluded recently that the incidence of carpal tunnel syndrome in workers performing repetitive motion tasks has been overestimated and that strict criteria, including EDX studies, must be used prior to diagnosis and especially before surgery.[7] Certainly, it is recognized in young women that early carpal tunnel syndrome or mild carpal tunnel syndrome may demonstrate negative electrodiagnostic studies, and these patients should be treated conservatively. Also to be considered is a small group of patients with a diagnosis of pronator teres syndrome who complain of cramping and aching in the forearm and hand, thumb weakness, decreased dexterity, and paresthesias in the hand. This is a clinical diagnosis since electro-diagnostic studies are positive in only a small percentage of cases (in contradistinction to CTS).

An editorial published in the *Journal of Hand Surgery* stated that all patients suspected of having carpal tunnel syndrome should have electro-diagnostic studies to: 1) establish a quantitative baseline; 2) detect a coexisting

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unsuspected polyneuropathy, and 3) to show that a diagnosis for carpal tunnel syndrome, regarded as likely but uncertain, is indeed correct.[8] More forcefully published was the opinion that not only were nerve conduction studies an indispensable part of preoperative evaluation, but that it was unjustified to intervene surgically without them for carpal tunnel syndrome.[9] Those authors also noted the sham effect and pseudo-recurrence problem of patients undergoing carpal tunnel release with negative electro-diagnostic studies.[10] Further, they pointed out the risk of performing surgery in that group of patients without long-term benefit and initial loss of grip strength as well as the workers' compensation costs involved. Katz et al reported that EDX conduction studies are the "gold standard" for confirming the diagnosis of carpal tunnel syndrome.[11] In a special summary statement by the American Academy of Neurology, American Association of Electrodiagnostic Medicine, and American Academy of Physical Medicine and Rehabilitation published in *Neurology*, the results of electrodiagnostic studies were found to be highly sensitive and specific for the diagnosis of carpal tunnel syndrome with a specificity of 95% or greater.[12] Diagnostic criteria were enumerated and the first criterion was a prolonged distal sensory latency of the median nerve, now made more reliable by computer averaging of wave forms. Similarly, the American Association of Electrodiagnostic Medicine Quality Assurance Committee reviewed 165 articles and concluded that median sensory and motor nerve conduction studies are valid and reproducible clinical laboratory studies that confirm a clinical diagnosis of CTS with a high degree of sensitivity and specificity; and that a prolonged median sensory conduction confirmed the diagnosis of CTS more often than median motor nerve conduction.[13]

Grundberg found only an 8% false negative rate[14] and Louis noted only a 12% false negative electrodiagnostic rate, especially in young women undergoing electronegative carpal tunnel release in workers' compensation cases.[15] Approximately 60% of patients referred with the diagnosis of carpal tunnel syndrome actually are diagnosed with carpal tunnel syndrome by electrodiagnostic criteria.[16] This parallels the findings of Buch-Jaeger[9] and Braun and Jackson study.[2]

A review of several references reveals that surgical intervention for carpal tunnel syndrome is not perfect. In 1984, Al-Qualtan et al reported a poor outcome in 13.5% of their carpal tunnel surgery patients.[17] In an American Association of Hand Surgery survey conducted by Shenck on 26,000 cases, 50% were asymptomatic following surgery, 33% markedly improved, 5% slightly improved, and 3% were unimproved.[18] In 1992, Yu et al determined carpal tunnel surgery results as follows: good 27%, fair 42%, poor 32%.[19] This was for patients who had associated symptoms of thoracic outlet syndrome or performed strenuous physical work, and all of whom had failed conservative treatment. In 1993, Hauft et al reported only an 86% improvement in all their postoperative carpal tunnel cases (and all their patients did have preoperative electric studies). [20]

For the nonsurgical management of carpal tunnel syndrome, Kaplan et al reported 18% success and partial success in 35% of their carpal tunnel release cases.[21] They succinctly stated: "Because carpal tunnel syndrome encompasses all causes and stages of median nerve compression at the wrist, there is no uniform presentation; instead, there is a variety of symptoms ranging from occupational paresthesiae to complete lack of motor and sensory function." Weiss et al have published their protocol of initial conservative treatment of patients (86% women) with CTS. Thirteen percent of their cases had complete relief of symptoms after utilizing splints and steroid injections.[22]

We would be remiss not to quote Novak, MacKinnon, and coworkers: "Despite advances in electrophysiology, the diagnosis of carpal tunnel syndrome remains a clinical one. No single test is currently used as the gold standard, though electrodiagnostic studies and nerve conduction studies are frequently performed. However, these relate directly to the abnormal physiology of the median nerve in the carpal tunnel and, in the early stages of carpal tunnel syndrome, may fail to detect any abnormality."[23] Nevertheless, Luchetti and coworkers who found that the stepwise measurement of the median nerve sensory conduction velocity was "the most sensitive method" of diagnosing the early stage of carpal tunnel syndrome.[24] Chinese neurologists from Beijing in 1995 concluded that the diagnosis of carpal tunnel syndrome must include EDX testing and illustrated multiple associated conditions and diagnoses.[25]

Physicians and surgeons should be discouraged initially from suggesting operative intervention for electronegative carpal tunnel syndrome. Weeks and coworkers concluded that carpal tunnel release in symptomatic patients with "normal or only slightly abnormal" nerve conduction studies (EDX) should be approached "cautiously."[26] These cases should undergo release only after sustained periods of search for a different etiology causing their symptoms and only after a considerable period of conservative treatment. Realistically, the cost of EDX testing must be considered. However, this should be weighed against the cost of unnecessary surgery and the cost of the complication rate of carpal tunnel release. One severe complication may equal the cost of multiple EDX studies even without factoring in the pain and suffering of the patient and further time lost from work. Furthermore, some patients will need to change their occupation that produced the carpal tunnel syndrome without undergoing

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surgery rather than have the surgery with the hope of preventing recurrent symptoms. Ergonomic changes are more imperative in this group of patients than surgical intervention.

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Editor's Note: Dr. Arons's and Dr. Hasbani's Commentary on the importance of electrophysiologic testing in diagnosing the carpal tunnel syndome was submitted to three neurologists and four hand- or neurosurgeons. The neurologists all agreed with his conclusions on the value of EDX in making a definitive diagnosis; the surgeons were equally certain that the carpal tunnel syndrome could be accurately diagnosed by history and clinical examination alone in almost all cases without recourse to the added expense and discomfort of EDX. Delaying until the EDX demonstrates impaired nerve function might in fact, they wrote, reduce the chances of recovery.

Late 20th-century medicine is as full of controversies over the appropriate ways to diagnose and manage the ills to which we fall heir as it has ever been. We seem overwhelmed by the richness of the means provided us by biomedical science and technology. It is a measure of our art to sort and choose the best, shortest, and most efficient course to follow for each of those who come to us for help.

Anesthesia Is Not Dreamland

Simplified descriptions of anesthesia have evolved so that patients may comprehend a technical language that they would not be expected to understand. In addition, these descriptions help allay the patient's anxiety. In

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anesthesiology, the phrases "you will be going to sleep" and "when you wake up" have served the purpose simplifying the mysteries and complexities of the anesthetized state but they have also trivialized the speciality of anesthesiology. Many patients have been led to believe that the anesthetic is always a controlled variable that plays a minor role in the operative experience. On more than one occasion someone has asked me why the anesthesiologists bill was so expensive; after all, they contend, "all he did was put me to sleep." Since the overwhelming majority of anesthetics administered are free of complications, there is little physical evidence that we have participated in the patient care other than a somnolent patient postoperatively. Recently, the mother of a child who was about to undergo a minor surgical procedure inquired if administration of anesthesia was dangerous. I conveyed to her that complications can and do arise depending on the physical status of the patient and the surgical procedure. However, I emphasized that poor outcomes directly attributable to the anesthetic are statistically rare events. Not satisfied with my answer, she pressed on and wanted to know specifics. Needless to say, terms such as cardiac arrest, aspiration pneumonia, and brain damage evoked anxiety in this parent, but she acquired a more complete understanding of the benefits and perils of the anesthetized state. Anesthesiology has made great strides in improving patient safety and outcome over the past decade. The introduction of safer medications, advances in patient monitoring systems, and well- trained anesthesiologists have led to dramatic decreases in adverse outcomes attributable to anesthetic care. However, patients must appreciate that a near zero incidence of a maloccurrence does not mean that the risks are insignificant. Only if there is a poor outcome will the true appreciation of the complexity of anesthesiology become apparent. Sleep and wake up will continue to be used during patient interviews; it is imperative that patients understand that there are many potential perils between these two points. Anesthesiologists expend great efforts and utilize special skills to guide patients through surgery in a safe, well-controlled manner.

At the 11th World Congress of Anesthesiologists held in Australia last year, Sir William Hayden, who is Governor-General of the Commonwealth of Australia, had noted that anesthesiologists have been, by and large, content to provide their services to patients effectively but unobtrusively. He also stated that the true scope and full work of the modern anesthetist is insufficiently understood and commonly discounted because of the self-effacing style of anesthesiology. I believe that his assessment is valid. Anesthesiologists have been at the forefront of research on topics such as perioperative cardiac morbidity, blood salvaging techniques to reduce blood transfusions, pharmacology research, pain control modalities, and critical-care medicine. These are but a few examples of how the discipline of anesthesiology has contributed to the advancement of medicine. In the operating room, the anesthesiologist's roles and responsibilities are not subordinate to those of the surgeon; the anesthesiologist is a co-leader of the patient-care team who is often looked to for direction and to take control during critical incidents in the perioperative period. Dr. Norig Ellison, who was the past president of the American Society of Anesthesiologists, made an analogy between anesthesiology and electricity; no one turns on a light switch and exclaims what great electricity we have; only when there is a power failure is comment made.

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50 Years Ago

From *The Connecticut State Medical Journal*

June 1947

Connecticut and the Founding of the American Medical Association

STANLEY B. WELD, M.D., Hartford

THE journey from various points in Connecticut to New York City was a formidable one a century ago. From Hartford it was possible to reach New Haven by rail as this road had been operating since December 1844 with trains running at the enviable speed of 20 miles an hour. From New Haven the journey must be completed by stage or by boat. From the region of New London and Norwich it was possible to reach the latter city via the Worcester and Norwich Railroad, thence by stage to Stonington where a boat trip to New York City completed the journey. In Fairfield and Litchfield Counties railroads ran from Danbury to Norwalk and from Canaan to Bridgeport and steamboat from the latter city to New York. Not until 1848 do we find the New York and New Haven Railroad operating three accommodation trains and one express train, the latter stopping at Bridgeport, Norwalk, Stamford and New Rochelle. These were days before the introduction of dining cars and oil lamps, although sleeping cars were operating on the Pennsylvania Railroad at the time. A picture of the sleeper of that era is a far cry from the present luxurious equipment of Pennsylvania's Broadway Limited. The car was divided into four compartments, each equipped with three "bunks." In the rear of the car was a towel, a wash basin, and a bucket of water. No bed clothing was furnished, the light came from candles and the heat from box stoves burning wood or sometimes coal. The trains entered New York over the New York and Harlem Railroad, with the cars cut off at 45th Street and coasting down Murray Hill to the station under hand brake control or hauled by horses from 42nd Street to the terminus at Canal Street. Rail travel had its catastrophies then as now, as may be seen by the account of the accident at Norwalk on May 6, 1853, when a train fell through an open drawbridge into the Norwalk River. Forty-four passengers were drowned including seven physicians returning home from the 6th annual meeting of the American Medical Association in New York City.*

The first meeting of the National Medical Convention, the forerunner of the American Medical Association, was convened in New York City in May 1846. When Dr. Luther Ticknor, a native of Vermont and at that time practicing in Salisbury, Connecticut, first learned that a national medical association was proposed he wrote to the *Journal of Medicine*, then edited by his friend and brother, Dr. C. A. Lee of New York, earnestly advocating such an organization. He also wrote to Josiah Beckwith of Litchfield, asking his advice about calling an "extraordinary meeting" of the State Society to appoint delegates to the first convention of the National Association. Dr. Ticknor was a man of indomitable perseverance, intent on progress. He not only held many offices in the Connecticut Medical Society, including that of president at the time of his death, but represented his town at two sessions of the State legislature. Dr. Fishbein in his History of the American Medical Association credits Dr. Ticknor with correspondence with Dr. Nathan Smith Davis of New York, one of the prime movers in the first organization meeting and a leader in The American Medical Association for years to come. As Dr. Fishbein has so astutely pointed out: "One is constantly amazed at the remarkable talent for organizational efficiency and the supreme qualities of leadership manifested by Nathan Smith Davis in the first forty years of the work of the American Medical Association. If ever it could be said that one man more than any other deserved credit for having inspired the necessary cooperation for

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*Connecticut delegates drowned were Archibald Welch and Samuel Beach.

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advancement, for having manifested ingenuity of thought and action, for having worked with indomitable courage and energy for the advancement of an organization, that credit should go to Dr. Nathan Smith Davis." Doubtless we should have found Luther Ticknor prominent in that memorable first meeting had not death taken him on April 19, one month previously.

The first meeting of the National Medical Convention assembled in the building of the Medical Department of the University of the City of New York on May 5, 1846 at the call of the New York State Medical Society. The manner of appointment of delegates was somewhat confused by two conflicting resolutions passed on successive years by the New York Society. The first called for the appointment of delegates "from Medical Societies and Colleges in the whole Union," the second "did not contemplate the appointment of Delegates ... by County or merely local Societies in those States where delegates are appointed by a regularly organized State Society." The result was a reporting "of all gentlemen from Medical Societies, Colleges and Institutions of all the States who come properly accredited," leaving the decision up to the Convention as to whether or not these shall constitute the National Medical Convention. This latter broader basis was adopted for official membership in the Convention.

Connecticut sent nine of her distinguished physicians as delegates to New York City in May 1846. Most of them were prominent in medical affairs at home. V. M. Dow of New Haven, Rufus Blakeman of Greenfield, William H. Cogswell of Plainfield, Josiah G. Beckwith of Litchfield, Eleazur Hunt of Hartford, D. T. Brainard of New London, and Richard Warner of Cromwell represented The Connecticut Medical Society. The Medical Institute of Yale College selected Eli Ives and Jonathan Knight. The minutes of the convention record that George Sumner of Hartford, "a delegate from the Medical Society of Connecticut," was also received.

The outstanding individual of this group without any doubt was Jonathan Knight, an active teacher at Yale for 51 years. He appears first as a member of the committee of one from each State represented to nominate officers for the Convention. This committee unanimously selected Dr. Knight as the first president. Much has been written of this distinguished gentleman who always appeared in public clad in dress coat and faultless white tie. Descendent of a line of physicians, he entered Yale College at the youthful age of 15. He became eminently successful as a practitioner and a teacher, filling successively the chairs of professor of physiology and anatomy and of surgery at the Medical Institute of Yale College. He was twice president of the American Medical Association and the manner in which he presided is said to have been the subject of such universal admiration that he was very often selected to preside over meetings of the Committee of the Whole. His success as a presiding officer lay in the use of common sense rather than in a knowledge of parliamentary rules. In 1838 Dr. Knight was the leading surgeon in Connecticut. It is not difficult to picture this man of calm dignity and mild radiance standing before his colleagues at that first convention, conservative, yet possessing opinions of his own. He bore his honors modestly as became the thorough student that he was. Connecticut may be justly proud of Jonathan Knight.

One of the first resolutions introduced pertained to medical education. On the committee of nine appointed to bring this subject before the Convention we find Connecticut represented by D. T. Brainard of New London. A resolution was also introduced that a "committee of seven be appointed to report a plan of organization for such an Association at a meeting to be held in Philadelphia on the first Wednesday in May 1847." The name of W. H. Cogswell of Plainfield appears on this important committee. William Henry Cogswell was Windham County's most prominent physician of that day. He later served the State Society as its president for two consecutive years. A kindly man with a deep sense of honor, temperate, prudent, patriotic, he was rewarded during the Civil War by receiving from Governor Buckingham a special commission to visit the sick and wounded Connecticut soldiers in U. S. Military hospitals. He appeared twice as a member of the State Legislature, in 1830 in the House and in 1860 in the Senate.

A third resolution called for a committee of seven "to prepare and issue and address to differently regularly organized Medical Societies and chartered Medical Schools in the United States setting forth the objects of the National Medical Association and inviting them to send delegates to a convention to be held in Philadelphia on the first Wednesday in May 1847." To this committee were appointed two New Haven physicians, Eli Ives and V. M. Dow, and George Sumner of Hartford. One of these gentlemen, Dr. Ives, has left an enviable record. Like Jonathan Knight he was a prominent member of the faculty of The Medical Institute of Yale College, holding in succession the chairs of professor of materia medica, professor of theory and practice of medicine, and again professor of materia medica. He was active in the New Haven County Medical Association and secretary of the State Society from 1810-1812. His fame as a botanist reached beyond the border of Connecticut and he is reputed to have gained a knowledge of the medical uses of native plants which was believed to be unequalled in his day. With a smothered voice, rambling all over the field in his lectures, he must have created some amusement for his students as he stood there plying his uncommonly large deviated nose with great pinches of snuff, much of which, it is rumored, lodged in the folds of his waistcoat. Yet he inspired confidence in his patients, so great that it required three horses to serve his needs of transportation over the countryside. The American Medical Association honored Dr. Ives by electing him president in 1861.

The question of a satisfactory premedical education came before this first convention and a resolution was passed, to wit, "that it is desirable that young men, before being received as students of medicine, should have acquired a suitable preliminary education and that a Committee of Seven be appointed ... to report at the meeting to be held on the first Wednesday in May 1847." We find D. T. Brainard of New London serving on this committee also.

Of far reaching effect was a resolution then introduced, "that the Union of the business of Teaching and Licensing in the same hands is wrong in principle and liable to great abuse in practice. Instead of conferring the right to license on Medical Colleges and State and County Medical Societies, it should be restricted to one Board in each State, composed in fair proportion of representatives from its Medical Colleges and the Profession at large, and the pay for whose services as Examiners should in no degree depend on the number licensed by them." Dr. George Sumner of Hartford, as was his custom, moved to lay this resolution on the table but later thought better of his action and withdrew the motion. The reference committee of seven which considered this resolution brought in a lengthy report. Connecticut's representative on this committee was Rufus Blakeman of Greenfield. As a member of the Committee of Examination of the Connecticut Medical Society for seven years, Dr. Blakeman must have been eminently qualified for this task, but for some unknown reason he did not sign the committee's report. Rufus Blakeman was an outstanding member of the profession and the author of a book entitled "A Philosophical Essay on Credulity and Superstition," published in 1849. In 1851 he was president of his State Society and, like many of his contemporaries, took an active interest in local politics, representing the town of Fairfield in the legislature and serving for several years as Judge of Probate. He must have possessed more than an average interest in biographical history as his presidential address sketches the lives of the early practitioners of Fairfield County.

Among the other Connecticut physicians who were present at this first National Convention was the colorful Josiah G. Beckwith of Litchfield. He was destined to guide the fortunes of the Connecticut Medical Society through those war years of 1862 and 1863. At its annual meeting in Bridgeport in 1862 he addressed the Society on "Medical Progress" and the following year in Rockville on "The Medical Profession-Its Dignity and Grandeur." It was this same Josiah Beckwith who in his presidential address of 1862 spoke these words: "This year has witnessed the transformation of a peaceful people, devoting their energies to the cultivation of the soil, to manufactures and commerce, into the greatest military power on the earth; the pursuits of husbandry have been interrupted by the march of great armies, and the hum of the wheel and the smoke of the furnace have been lost in the roar of artillery and the cloud of battle." Twice in this twentieth century this statement again has been paralleled.

Eleazur Hunt of Hartford, who had received an honorary degree of M.D. in 1826, was four years clerk of the Hartford County Medical Association and many times a Fellow at the annual meetings of the Connecticut Medical Society. Discriminating, prudent, judicious, Dr. Hunt was remarkably successful in the practice of medicine as distinguished from surgery, and particularly in the treatment of women and children. Another delegate from Connecticut, Richard Warner, was practicing in Cromwell at the time of the first National Medical Convention. A native of Hadlyme, he had practiced in that town and in Chester and later in East Haddam before moving to Cromwell. Dr. Warner probably was best known for his support of all the moral reforms of his day. A man of strong character, honest and upright, he boasted many warm friends and, as is so often the case, many bitter enemies.

One of the most active and valued members of the Connecticut Medical Society was George Sumner of Hartford. Trinity College in that city has good reason to remember this physician who as professor of botany planned the landscaping of the college grounds. He was a man of sound constitution, vigorous intellect, unexceptionable habits. Active in the founding of the Hartford Retreat, the Hopkins Medical Society, and later the Hartford Medical Society, Dr. Sumner likewise served as clerk of the County Association and on many of the State Society committees. As president of the latter organization his address on "The Early Physicians of Connecticut" maintains a place of importance in the field of medical biography. A stout man of massive features, "well marked and luminently expressive of benevolence and good sense," with a gait suggesting that of a sailor on shore leave, he showed a singular preference for riding. His practice grew and overtaxed his physical and mental powers, as it has in so many instances, resulting in a premature old age and a comparatively early death.

According to plans laid at the first meeting of the National Medical Convention the second meeting was called in Philadelphia on May 5, 1847. This session was convened in the Academy of National Sciences, and continued through three days. It was at this session that regulations were approved for the actual formation of the

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American Medical Association. Connecticut was well represented by eleven physicians.* At the opening session Jonathan Knight's nomination as chairman was unanimously confirmed. Later when the nominating committee, of which Eli Ives was a member, brought in the slate of permanent officers, Dr. Knight was the only candidate for president. Thus he became for the second year president of the National Medical Convention.

One of the first acts of the new president was the appointment of a committee to invite Dr. John Redman Coxe to take a seat upon the floor of the convention. On this committee appears again the name of Eli Ives. George Sumner of Hartford early came into prominence when he offered the following: "Resolved, that a committee of three be appointed to ascertain and report to the next meeting of the Association what legal enactments exist in several states relative to the practice of medicine and also what societies have been formed to advance the medical profession."

At the first evening session of the Philadelphia meeting the real birth of the American Medical Association was accomplished in these words: "Resolved, that this Convention do now resolve itself into the 'American Medical Association' and that the Officers of the Convention continue to act as Officers of the Association until others be appointed." The vote of acceptance was unanimous. With Jonathan Knight serving as the first president the importance of Connecticut's position in the founding of the parent organization received further emphasis. Appreciating the implications of this heritage, the Connecticut State Medical Society has been ever mindful of its obligations. The first act of Dr. Knight as president was the appointment of a committee comprising one member from each State represented at the Convention to nominate officers of the Association for the ensuing year. Dr. N. B. Ives represented Connecticut on this committee and as a result of its deliberations Nathanial Chapman of Pennsylvania was unanimously chosen president. Also by unanimous consent four vice presidents were selected, Jonathan Knight, A. H. Stevens of New York, James Moultrie of South Carolina, and A. H. Buchanan of Tennessee. Eli Ives with four others was directed by President Knight to wait upon the president-elect and invite him to take the chair.

Committee business went on apace. Of the standing committees appointed at the Philadelphia session only one, the Committee on Indigenous Botany, carried the name of a Connecticut physician, Eli Ives. But there were many reports from Committees appointed the previous year at the first session of the National Medical Convention. One of these, the report of the Committee on the Organization of a National Medical Association, of which William H. Cogswell was a member, was signed by all except that gentleman. Perhaps this is best explained by the absence of his name from the list of delegates to the 1847 convention. To this committee goes the credit for drawing up the constitution of the American Medical Association. The wording of the preamble is of interest: "Whereas the Medical Convention, held in the city of New York in May, 1846, have declared it expedient 'for the Medical Profession of the United States to institute a National Medical Associations';

"Inasmuch as an institution so conducted as to give frequent, united and emphatic expression to the views and aims of the Medical Profession in this country, must at all times have a beneficial influence, and supply more efficient means than have been available here, for cultivating and advancing medical knowledge, for elevating the standard of medical education, for promoting the usefulness, honour, and interest of the Medical Profession; for enlightening and directing public opinion in regard to the duties, responsibilities and requirements of medical men, for exciting and encouraging emulation and concert of action in the profession, and for facilitating and fostering friendly intercourse between those who are engaged in it;-therefore,

"Be it resolved, in behalf of the Medical Profession of the United States,—that the members of the Medical Convention held in Philadelphia, in May, 1847, and all others who, in pursuit of the objects above-mentioned, are to unite with, or succeed them, constitute a National Medical Association;—and that, for the organization and management of the same, they adopt the following Regulations."

Then follow the six articles of the constitution of the American Medical Association. Besides the title, provision was made for membership, delegates, meetings, officers, eight standing committees, and "equal assessment of not more than $3.00 annually on each member."

The right of licensure by medical colleges was reported on and from this came a resolution to the effect that "some additional checks to the exercise of this right should be established by the great body of the medical profession." This resolution was referred to one of the new standing committees, that on medical education. A code of medical ethics was brought in at this Philadelphia meeting, in which was discussed the duties of physicians to their patients together with the obligation of patients to their physicians, the duties of physicians to each other and to the profession at large, and the duties of the profession to the public and the obligations of the public to the profession.

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*From the Medical Institute of Yale College, Jonathan Knight and Eli Ives; from the Connecticut Medical Society, George Sumner, N. B. Ives, B. Fordyce Barker, Elijah Baldwin, Johnson C. Hatch, William B. Casey, Alden Skinner, and Elijah Middlebrook; from the New Haven Medical Association, Ebenezer H. Bishop. Drs. Barker Baldwin, Casey and Skinner were absent.

Instead of Josiah G. Beckwith, Litchfield County sent Johnson C. Hatch to Philadelphia. About a decade before this meeting Dr. Hatch had been forced to relinquish his practice because of poor health, but after two years in Illinois he returned to Kent, apparently recovered. At one time Dr. Hatch was president of the Litchfield County Society and his name often appeared in the list of Fellows of the State Society. His candor and perfect truthfulness may have accounted for his election to one session of the Legislature and to his position as Judge of Probate which he enjoyed for several years. As previously noted four of the eight delegates from the Connecticut Medical Society did not attend. Last minute emergencies, entirely unforeseen, must have kept away such men as B. Fordyce Barker, William B. Casey, and Alden Skinner. It was probably another story with Elijah Baldwin. Shortly before the Philadelphia convention Dr. Baldwin then practicing in Central Village, had been obliged to stop work because of severe acute arthritis. For four years he traveled and he was engaged in this health seeking diversion when his name was called on the roll of delegates at Philadelphia. Soon after he retired to the life of a farmer in Canterbury, refusing the appointment of surgeon of the 5th Connecticut Regiment in 1863, but serving as president of the Windham County Medical Society in 1879. Elijah Baldwin was somewhat eccentric in character, yet had a kind word for all. Unlike most physicians of his day, when he died suddenly of chronic nephritis in 1888 he left a large estate to his heirs.

Alden Skinner in 1847 was practicing in his native town of Vernon. His biographer believes few men visited more patients in a year than did he. He was a man of an uncommonly strong and vigorous intellect, well read, possessing a large and tenacious memory. A regular attendant at the Tolland County medical meetings, he was most interested in teaching young medical students. He was one of the casualties of war, dying of "malarious typhoid" in New Orleans while a surgeon of the 25th Regiment, Connecticut Volunteers.

It is not surprising, perhaps, that William Casey did not get to Philadelphia in 1847. In addition to his practice in Middletown at that time he was interested in newspaper publishing and later became proprietor and editor of a news daily and then of a weekly publication. Dr. Casey was a versatile man. Besides practicing medicine and editing a newspaper, he was twice mayor of Middletown. He served as a surgeon in the Civil War, as a Trustee of the General Hospital for the Insane of the State of Connecticut, and as senior warden of the Church of the Holy Trinity in Middletown.

B. Fordyce Barker at the time of the Philadelphia convention was a resident of Norwich. His absence can probably be explained by his duties as lecturer on obstetrics in Bowdoin Medical School. This must have necessitated spending certain weeks of each year in the little Maine town of Brunswick and conceivably may have required his presence there that first week in May, 1847. Dr. Barker became one of medicine's great men. A native of Maine, a resident of Connecticut for a number of years, he spent the last three decades in New York City where he participated in the organization of the New York Medical College and occupied the chair of professor of obstetrics and diseases of women and children. He has become best known for his essay, "Puerperal Diseases," published in 1874 and translated into Italian, French and German. The Connecticut Medical Society honored him by selecting him to deliver the annual address in 1848. The New York State Medical Society elected him its president in 1860.

From Philadelphia the American Medical Association moved to Baltimore for its next convention which opened May 2, 1848. This year delegates came from 24 States, the District of Columbia, the Army and the Navy. Connecticut was represented by 28 physicians.* The status of medical practice in that day may be surmised to some degree by a perusal of the opening remarks of the president, Nathaniel Chapman of Pennsylvania. "This assemblage," Dr. Chapman said, "presents a spectacle of moral grandeur delightful to contemplate ... The profession to which we belong once venerated on account of its antiquity, ... has become corrupt, and degenerate, to the forfeiture of its social position, and with it, of the homage it formerly received spontaneously and universally.

. . . .

"The pilgrimage you have performed in coming hither at so many sacrifices of comfort and convenience, evinces the ardour of your zeal, and the loyalty of your devotion to this noble cause."

This zeal and devotion was recognized and repaid in a practical manner by a free passage home to all delegates on all the railroads of that day except the New York and Hudson River.

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*From Connecticut Medical Society, Norman Brigham of Mansfield; from Hartford County Medical Society, Archibald Welch, Samuel B. Beresford, H. A. Grant, E. Carrington, David A. Tyler, Lyman Parker, A. Beardsley, N. C. Baldwin, D. L. Daggett, Joel Canfield, G. L. Platt, J. Goodsell, and N. B. Ives; from New Haven City Medical Association, Pliny A. Jewitt, Ebenezer H. Bishop, and S. Punderson; from Windham County Medical Society, J. Hammond; from Litchfield County Medical Society, Remus M. Fowler, George Seymour, A. A. Wright, R. M. Woodruff, and M. Peters; from New London County Medical Society, B. Fordyce Barker, and W. W. Miner; from Middlesex County Medical Society, Richard Warner, and from the Medical Institute of Yale College, Jonathan Knight and Henry Munson. Absent: Drs. Grant, Carrington, Tyler, Parker, Beardsley, Baldwin, Daggett, Goodsell, Bishop, Seymour, Woodruff, Miner and Munson.

Connecticut continued to figure prominently at Baltimore as at New York and Philadelphia. N. B. Ives served on the nominating committee the first day; but as all officers elected that day resigned, a second nominating committee was selected by the delegates from the several states on the following day, and on this was placed Samuel B. Beresford of Hartford. Pliny A. Jewett of New Haven served as a teller at the first election of officers. Archibald Welch of Wethersfield was selected by the Convention to serve on a committee of five to prepare rules of order for the government of the Association. Jonathan Knight, vice-president, occupied the chair the afternoon session of the first day and again on the second day. Various standing committees were selected by the nominating committee, Dr. Jewett replacing Dr. Beresford in making these selections. Jonathan Knight was appointed to the Committee on Surgery and B. Fordyce Barker to the Committee on Publication. Samuel B. Beresford long will be remembered as the distributor of cigars to all who attended the meetings of the Hartford Medical Society, while he himself never indulged. He had an interesting career. Born in Dutch Guiana of English parentage, educated in the Barbadoes and later in England and Scotland, he practiced medicine for seven short years in his native land. Then, with his physician-father who had been a medical officer in the British service, he came to the United States and settled in Hartford. He was a deliberate operator, especially skillful in obstetrics and ophthalmological surgery. Dr. Beresford was one of those tireless workers who took no vacation for pleasure over a period of twenty-five years. At the end of his term as president of the Connecticut Medical Society in 1868 he addressed his fellow members on "The Use and Abuse of Tobacco."

Pliny A. Jewett distinguished himself by his quick and able intellect, his cordiality toward his friends and his contempt for his enemies. He is described as noble in stature, dignified and courteous in manner, social to the extreme. Yale honored him by electing him to the professorship of obstetrics in 1856. The Connecticut Medical Society recognized his qualities of leadership by electing him its president for the year 1876 and by frequently selecting him to represent it at meetings of other State societies. We learn that "one of its (American Medical Association) earlier meetings at New Haven 'has kept his memory green' amongst the gray, as was attested at some of its recent sessions by kind inquiries, and a recounting of the courtesies and attentions then received at his hand, with mention of his wit and adroitness in reconciling clashing forces, and establishing at once apparently harmonious relations."

Dr. Jewett perhaps is best remembered as the organizer and commanding officer of Knight's U. S. Army General Hospital in New Haven during the Civil War.

Archibald Welch, then living in Wethersfield, had a deep interest in the State Society. His residence in that community of historical fame was not long, since, a few months after returning from the session in Baltimore, he moved to Hartford because "he could no longer endure the hardships of the practice of medicine in the country." This was at the age of fifty-four. Shortly before his death six years later he still was erect and vigorous, with an elastic step. His last days were spent in the service of organized medicine, attending the American Medical Association convention in New York City in 1853. With Samuel Beach of Bridgeport he met his death by drowning when his train went through the drawbridge into the Norwalk River.

Joel Canfield was practicing in Guilford at the time of the Baltimore Convention in 1848. The record shows that he was active later in the antislavery movement and a strong proponent of temperance. Gideon Platt went to Baltimore from Waterbury where he was engaged in surgery, obstetrics and the general practice of medicine. Remus Fowler was one of the representatives of the Litchfield County Society, practicing in Washington. He too was a zealous advocate of temperance and a profound hater of slavery, and enjoyed an extensive consultation practice throughout his county and the neighboring towns in Massachusetts.

Of the absentees at Baltimore, David A. Tyler of New Haven was one of the best known. All his life he was obliged to combat the handicap of a delicate constitution. Suffering from repeated pulmonary hemorrhages, he was finally forced to give up his practice and busy himself with the study of botany in which he became an expert. The prolongation of his life to the age of sixty-seven undoubtedly may be attributed to this fortuitous change of occupation. In spite of his physical handicap, Dr. Tyler was a happy, cheerful soul, one of the most able, upright and honorable in the medical profession.

The assessment payable to the American Medical Association in those early days was $3. We find George Sumner in 1847 credited with a payment of $5. Certain physicians were designated as permanent members. In 1848 the list from Connecticut includes the delegates and members attending the Baltimore convention, and, in addition, Johnson C. Hatch, Elijah Middlebrook, Ebenezer H. Bishop, Eli Ives, and George Sumner. Resolutions were passed at this session to the end that laws against the importation and sale of adulterated, deteriorated and misnamed drugs be passed. This was many years before the establishment of the Council on Pharmacy and Chemistry or the passage of the Pure Food and Drug laws.

Boston was selected as the place of meeting for the next session in 1849. At the Boston session one of the outstanding individuals was Worthington Hooker, a direct descendant of Connecticut's Reverend Thomas Hooker and a

HEALTH SCIENCES AND

delegate from the New London County Society. His Report of the Committee on Medical Education appointed by the American Medical Association was reprinted in the Proceedings of the Connecticut Medical Society, 1852. In this report attention is called to the fact that the general standard of education and attainment is much lower in medicine than in other professions. This is attributed to a deficient preliminary education; a method of studying medicine by reading and attending lectures for a few months only; absenteeism from lectures, hospital, and dissecting room; and abuse of the method of examination for degrees. The profession was labelled overcrowded and comprised mostly of unworthy and ignorant men. Dr. Hooker as a member of that committee in 1849 and its chairman the following year, undoubtedly knew whereof he spoke. Well trained, a graduate of Yale College and Harvard Medical School, for several years a practicing physician in Norwich, he later succeded Dr. Ives at the Medical Institute of Yale as professor of Theory and Practice of Medicine. He was the author of many essays and published several books.

Dr. Hooker offered the resolutions at the annual meeting of the Connecticut Medical Society held in Gilman's Saloon, Hartford, May 11, 1853, five days after the railroad accident in Norwalk. The last paragraph of these resolutions strikes a familiar note: "Resolved, that the very prominent carelessness, both in the selection of individuals for important and responsible posts, and in the adoption of obvious and necessary precautions against accidents, deserves the most emphatic rebuke from the community, and urgently calls for the immediate enactment of stringent laws on this subject on the part of our legislatures."

In 1860 the American Medical Association honored New Haven with its annual session. The president that year, Dr. Henry Miller, introduced the subject of illegal abortion and urged action against this practice by the legislature in every State. The clouds of war soon gathered over the nation. The leaders of organized medicine became the leaders in the armies and navies on both sides of the Mason Dixon line. For two years an annual gathering of physicians from the various States was impracticable, even impossible. The parent organization did not assemble its delegates again until 1863 when for the first time Chicago acted as host. Connecticut was never again to have the honor of being host to the annual gathering of the parent organization in spite of that fact the significant early years of the American Medical Association bear stirring testimony to the wisdom and leadership of many of Connecticut's great physicians.

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Stanley J. Keating, Jr., M.D.
PRESIDENT

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STANLEY J. KEATING, JR., M.D.

Education:	
Fairfield College Preparatory School	1954
Holy Cross College, Worcester, Massachusetts	1958 B.S.
Georgetown University, Washington , D.C.	1962 M.D.
Post Graduate:	
Rotating Internship: St. Francis Hospital, Hartford	1962-63
Resident: General Surgery, St. Francis Hospital, Hartford	1963-64
Anesthesiology, St. Francis Hospital, Hartford	1964-66
Staff Appointments:	
Clinical Associate Anesthesiologist, St. Francis Hospital, Hartford	1966-67
Chief, Anesthesia and Operating Services, 2nd Surgical Hospital, (Massachusetts), Republic of Vietnam	1967-68
Chief, Anesthesia and Operating Services, U.S. Army Hospital, West Point, New York	1968-69
Assistant Visiting Anesthesiologist, St. Francis Hospital, Hartford	1968-73
Associate Attending Anesthesiologist, St. Francis Hospital, Hartford	1973-79
Consultant in Anesthesiology, Bristol Hospital, Bristol, Conn.	1969-72
Consultant in Anesthesiology, Bradley Memorial Hospital, Southington	1970-74
Senior Attending Anesthesiologist, St. Francis Hospital, Hartford	1980-
Clinical Assistant Professor of Anesthesiology, University of Connecticut School of Medicine, Farmington	1981-85, 1991-
Chairman, Department of Anesthesiology, St. Francis Hospital, Hartford	1979-82
Certification:	
Diplomat, American Board of Anesthesiology —No. 4669	1969
Fellow, American College of Anesthesiology	1969
Military Service:	
Major, United States Army Medical Corps	1967-69
Decorations:	
Bronze Star Medal	
Soldiers Medal	
Licensure: State of Connecticut—No. 1558	1963
Teaching:	
Instructor, Residency Program, St. Francis Hospital, Hartford	1969-72
Instructor, School of Nurse Anesthesia, St. Francis Hospital, Hartford	1969-74
Syllabus, Cardiovascular, Physiology, School of Nurse Anesthesia, St. Francis Hospital, Hartford	1971
Seminar in Anesthesia, University of Connecticut School of Medicine, Farmington	1979-81
Society Membership:	
American Society of Anesthesiologists	
Connecticut State Society of Anesthesiologists	
Hartford County Medical Association	
Connecticut State Medical Society	
American Medical Association	
Organizations:	
Director, Connecticut Medical Insurance Company,	1984-
Underwriting Chairman, Connecticut Medical Insurance Company	1986
Executive Committee, Connecticut Medical Insurance Company	1988-
Director, Hartford County Medical Association	1989-
Councilor, Connecticut State Medical Society	1991-96
Vice President, Hartford County Medical Association	1993-94
Director, Procare IPA, Hartford County Medical Association	1989-95
Director, Medserv of Connecticut	1995-
President, Hartford County Medical Association	1994-95
Vice President, Connecticut State Medical Society	1995-96
President-Elect, Connecticut State Medical Society	1996-97
President, Connecticut State Medical Society	1997-98

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THE PRESIDENT'S PAGE

True Advocates

"Uncertainty is present in the decision-making process, not so much because there is a future as that there is, and will be a past .... We are prisoners of the future because we will be ensnared by our past."[1] I embrace this quotation because our past has been rich with challenge and achievement. Many of you have had occasion to visit the society's headquarters in New Haven. If you have and have at the same time visited the council room you will have noticed that pictures of most past presidents of our organization are portrayed about the walls of the room. It was prior to some long-forgotten meeting, alone in the room and stepping from frame to frame viewing these images that I was struck by two thoughts. One was how fortunate we were that these likenesses had been preserved to our present time. The other, with your indulgence, more introspective, asked what if anything did Dr. Eneas Munson (1794), or Dr. John Grannis, (1901), have in common and how did they relate, if at all, to our present time.

Some not very profound reflection reveals the obvious: Well, we are all doctors of medicine and these men had felt it important to gather together with their colleagues, their fellow physicians, to form an association, a society, a guild to provide to and for each other mutual aid in the pursuit of their common interests. They had all, I reflected, like me and like the vast majority of us gathered today here in this room, studied the science and the art of medicine and before beginning the practice of our profession taken an oath. So we have a great deal in common with our colleagues now displayed on those walls, for while the science of medicine has changed hugely over time, I am confident that many of them would hope that the art should not and indeed has not. We are a group, a society of physicians, sworn by a common oath to heal the sick, to honor our teachers, to nurture and teach each other. The oath goes on to explain, "if I keep this oath faithfully, may I enjoy my life and practice my art, respected by all men and in all times; but if I swerve from it or violate it, may the reverse be my lot."

My message this afternoon is not and will not focus on managed-care issues. I believe that most of us gathered in this room have heard much of this. Physician-directed initiatives go forward at this time on personal, group, and societal levels and have for some time. Indeed the plea for concerted and united action has been wonderfully articulated by my predecessor, Dr. Michael Deren. But, attending a meeting several weeks ago my attention was focused by a question from the chair of a standing committee of that organization as to what precisely the message should be to the organization's members. And immediately the response was that it was absolutely vital to emphasize to the membership the necessity of economic awareness and well-orchestrated action on economic fronts lest medicine lose it ability to determine its future course to nonprofessionals with only financial incentives guiding their actions, and of course these are essential concepts, some would say the seminal issues of these times. Be that as it may, let us be cautious lest we serve the payor at the expense of the patient. We are physicians, not providers. We are our patients' advocates. Health care is not the practice of medicine, it is one of the largest industries in America. We must sound a clarion call to everyone—legislators, business leaders, politicians, hospitals, our own allied health professionals—that we, the physicians, are in the end responsible for our patients' lives and well-being, and it is the physicians who are the *true advocates* for our patients' health.

All of us in medicine agree that there exist problems in the delivery of quality medical care. There has certainly been an explosion of knowledge, and with that knowledge and the application of our art and our technology, enormous benefits to our patients and society as a whole. That fact is reflected in our population's increased longevity, and not just longevity, but a productive, happy, beneficially longer life.

There is, I suppose, always a *quid pro quo* and there are studies to point out rather breathlessly that the health-care industry in the United States comprises some 13% of our gross national product. In reflection I might respond to the implied criticism—to what better use can the resources of a society be put than the well being and contentment of the members of that society?

You and I and our society in general have come a long way in the five or so years from Jackson Hole, Hillary Rodham-Clinton, and Ira Magaziner to the administrativen hodge-podge of delivery systems currently in existence. I fear many

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Incoming President's Inaugurual Address—House of Delegates, 14 May 1997

Continued on next page

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President's Page ... *Continued*

of our colleagues are demoralized and scourged by the manic ideas sweeping through our profession. I do not share this pessimism. I admit to dismay at times by our seeming inability to work together in our own self interest even as I see us working magnificently every day in our patients' interest.

We all know that outside our medical community the byword of the day is "CONTROL" as in we must control the delivery of care, we must devise systems, and we must impose conformity with good business practice. It dismays me when our colleagues cannot see what organized medicine is doing for them. It dismays me to see specialty societies threatening to break from parent organizations better to seek the grail of their own perceived self-interest. I would beseech us to seek ways to speak together, to act together, because only then will we be strong enough to influence the changes inevitably impacting our practice of medicine.

I consider it a great honor and responsibility to assume the presidency of our state society.

You all know the progression through our societies' elected offices from vice president, to president-elect, and finally to the presidency itself. I must say that it is not an overstatement to tell you that I have viewed with great admiration the zeal and dedication of the two presidents preceding me. Dick Hollister and Mike Deren have set a formidable standard for me.

I thank you for your demonstration of confidence and assure you of my intention to devote my efforts wholeheartedly to our mutual interests.

Stanley J. Keating, Jr., M.D.
President

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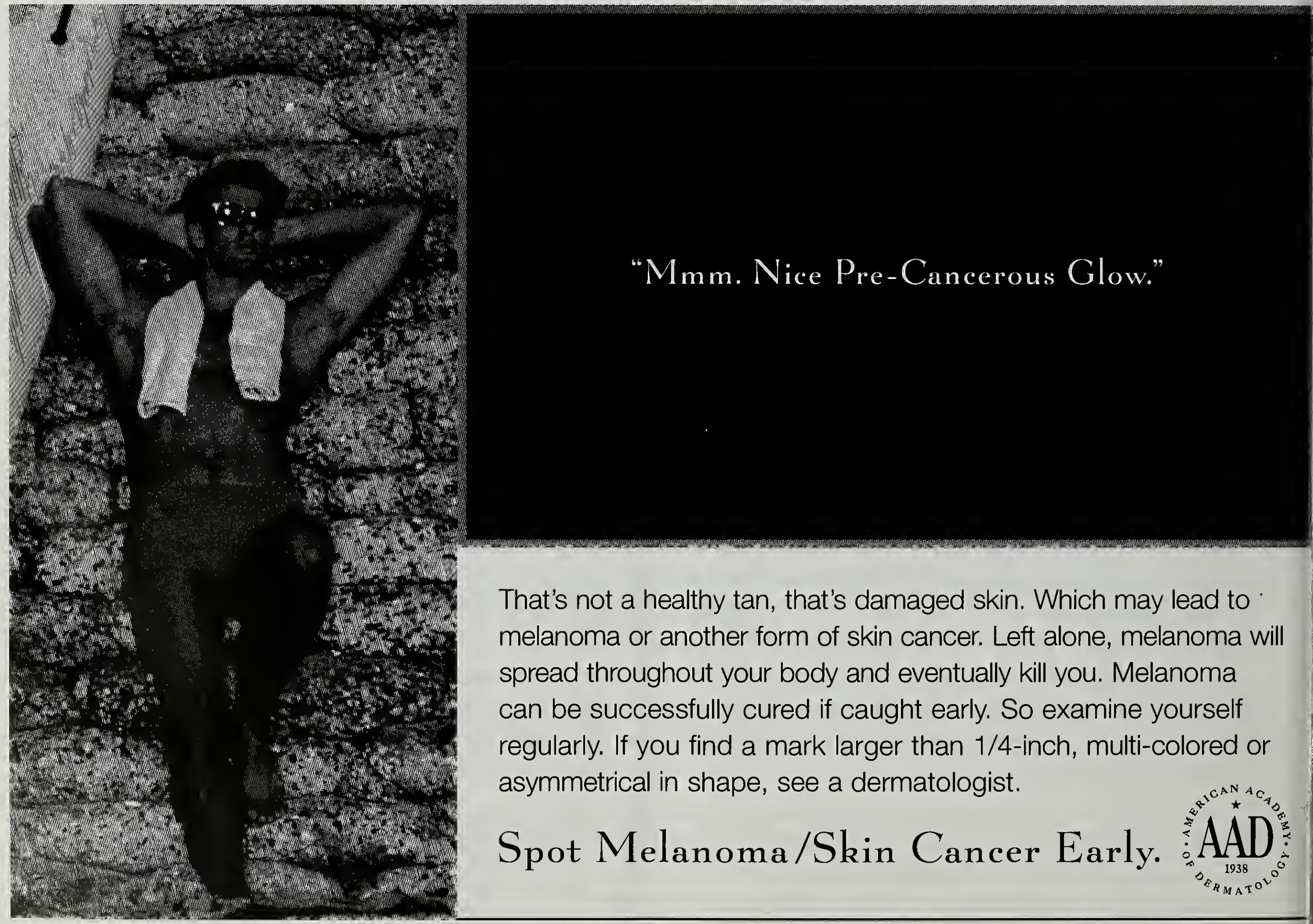
"Mmm. Nice Pre-Cancerous Glow."
AAD
AMERICAN ACADEMY OF DERMATOLOGY
1938

That's not a healthy tan, that's damaged skin. Which may lead to melanoma or another form of skin cancer. Left alone, melanoma will spread throughout your body and eventually kill you. Melanoma can be successfully cured if caught early. So examine yourself regularly. If you find a mark larger than 1/4-inch, multi-colored or asymmetrical in shape, see a dermatologist.

Spot Melanoma/Skin Cancer Early.

REFLECTIONS ON MEDICINE

Money Trumps Other Values

ROBERT U. MASSEY, M.D.

SEVERAL decades ago, during a visit to an academic health center on the West Coast, I asked about their collection rate: "Forty or fifty percent," I was told. Since my colleague was both a physician and administrator, I trusted the estimate and understood why he could not be more precise. During the 1950s when I was a member of a large group practice, I recall that we rarely collected more than 65% of the amount that we billed. We never turned a bill over to a collection agency, and often after a patient had made a few payments that we knew meant a sacrifice for her, we marked her next statement, Paid in Full. As physician-members of the clinic (it was an association, like the Mayo Clinic, not a partnership) we could circle any charge made; that signaled the business office to send no bill. Physicians, nurses, dentists, and clergymen (no clergywomen in those days!) were never sent a bill. For the most part medical insurance, usually Blue Cross, covered inpatient care only.

None of this was in any way unique in the medical community outside the clinic, nor was it limited to the West. Most of us drove Fords, Chevys, Plymouths, and had only one car. Older physicians might drive Buicks or Chryslers, and a few had even acquired Cadillacs!

After 1965 all this began to change. Two years following the passage of the King-Anderson Bill or Medicare in 1965, health care costs in the United States had doubled. Most physicians, at least at our place, took only passing interest in all this, letting the AMA do the worrying. Senator Clinton P. Anderson, after all, was one of our patients and a clinic booster; no need to disturb a good relationship. Anyway, we did predict that our incomes would rise, and, indeed, most increased by 25% within two years. We rebuilt our radiology department, bought expensive new Siemens diagnostic and radiation therapy equipment, expanded the laboratory, and were assured that we need not worry: our business manager said these new expense items were "pass-throughs" and Medicare would pick up the tab. We didn't question him. Within a few years medical insurance, outpatient as well as inpatient, became part of most wage agreements, and health-care costs increased almost 20 fold in 32 years.

In the two medical communities where I had practiced before Medicare I never saw patients denied care because they could not pay; in fact in the five emergency rooms in which I had taken call, patients were greeted by a nurse, not a clerk, and no one asked about money. It would have been considered discourteous, unethical, and bad medical judgment to have added that worry to a family already in distress. Hospitals were public trusts, a source of community pride, recipients of charitable giving; they were engaged upon a sacred mission.

As predicted, in the more than 30 years of Medicare, medicine has become thoroughly commercialized; in fact, so profitable that the outfits with the most money are buying each other out in their scramble to gain near-monopoly control of this golden goose. As my favorite hospital administrator, now retired, once said, "When the talk comes to money, *all* other values fly out the window."

That we have an embarrassingly tough problem in providing and paying for medical care is hardly news, but I believe it is basically neither a political nor an economic problem, but is rather cultural, having to do with our late 20th-century confusion of values and denial of virtues. I believe we once were quite certain that we were morally obliged to give care for all those in need, most of whom would pay the costs; some could not, a few would not, but the obligation was the same for all. There might have been two or three classes: coach, business, and first class, but all rode in the same plane with the same crew.

Managed-care cartels cannot do what is needed, their culture is the wrong one for medicine. We must hope for, work for, and loudly prophesy their early demise. Few of us are smart enough to know what to put in their place, but three goals appear desirable: limit costs, provide the best possible care to all, and make care available for everyone. We can only do two of those things. Most of us would, upon reflection, opt for the first and the last.

A White House committee and a Jackson Hole crowd of insurance types came up with two unworkable solutions. Perhaps by chipping away, bit by bit, as Dr. Kristen Zarfos in Middletown has recently done, the structure will give way, and history and our innate good sense will work their magic.

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ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

MEDICAL NEWS CAPSULES

This Month's Reading in Review

TIMOTHY B. NORBECK

"Some HMO executives say they have older and sicker members than other HMOs and these members cost more to care for. They are worried, too, that newer HMO operators will submit unrealistically low bids. If the government bases its rate for all HMOs on those lower bids, the rate could be too low to meet the costs of the HMOs with older and sicker members."

> HMO opposition to the federal government experiment to test competitive bidding of Medicare HMOs in Denver (called the "Denver" test).
> *USA Today* (15 May 1997)

Editor's Note: Excuse me, but haven't physicians been saying the exact same thing to the managed care companies (and with little response) for years? Now the shoe is on the other foot.

"Managed care as we know it will die, and we have a program to hasten the demise."

> Bryant Welch announcing the formation of the Legal Center for Patient Protection, which will facilitate lawsuits against managed care organizations. He is the CEO of the group.
> *Modern Healthcar*e (12 May 1997)

"I am saying that New York and other states must be more vigilant and more committed to protecting patients against HMO abuses. I think HMO abuses are the single largest health problem in America today, bigger than any particular disease."

> Betsy McCaughey Ross, Lieutenant Governor of New York, in an interview with *American Health Line* (15 May 1997)

Who's doing the *best* job serving consumers?

According to a recent Louis Harris poll, the answer is physicians, who received a good job rating of 83%.... The rest: telephone and computer companies (80%), drug companies (79%), hospitals (77%), banks (75%), auto manufacturers (70%), life insurance companies (64%), oil companies (59%), health insurance companies (55%), managed-care companies (51%) and tobacco companies (34%).

Business Week (21 April 1997)

"Who is most likely to tell you the truth—a prostitute, a used car salesman, or a politician? In a January poll, men, women, Republicans, Democrats, independents, liberals, moderates, and conservatives were in agreement. Nationally, 55% picked the prostitute, 12% the politician, 11% the used car salesman."

> From *The Woman's Quarterly* and published in *Forbes* (19 May 1997)

"If a man breaks his leg or a baby runs a high fever, it should not be assumed that their health insurance will cover a trip to the emergency room. That's what one Missouri health care plan, MetraHealth, told its members last summer. The plan sent its customers a letter listing those and other medical conditions it did not consider emergencies. A warning followed: "An emergency room visit for medical treatment is not automatically covered under your benefit plan."

That incident outraged the Missouri legislature, which was already examining consumer complaints about managed care. After lawmakers read the letter out loud at a hearing, bipartisan support for greater regulation blossomed.

NOTE: Right after MetraHealth sent the letter, it followed up with an apology and revised the policy to cover whatever a "reasonable person" would consider an emergency.

> *Congressional Quarterly* (15 April 1997)

North Carolina, Virginia, Kentucky, and Georgia are the only states in the nation in which the economic benefits of tobacco production outweigh the costs of smoking-related diseases, according to an analysis of U.S. Centers for Disease Control and Prevention data by the *Richmond Times-Dispatch*.... None of those states is among the 22 suing the tobacco industry to recoup Medicaid funds spent treating smokers.

Richmond Times-Dispatch (6 April 1997)

Only in America: Actual signs seen across the U.S.:

- In a church: Would parishioners please note that the bowl to the rear of the church that says "for the sick" is for monetary contributions only. Thank you.
- On the wall of a Baltimore estate: Trespassers will be prosecuted to the fullest extent of the law.—Sisters of Mercy.

> *Forbes* (21 April 1997)

HEALTH SCIENCES AND

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

A Visit to a Chiropractic College.

I would like to share with my medical colleagues a rather unique experience in visiting a chiropractic college, the New York Chiropractic College in Seneca Falls, New York, located in the former Eisenhower College.

The buildings are impressive, glitzy, alabaster structures surrounded by finely manicured, expansive lawns that would put to shame the campuses of Yale and Harvard medical schools.

The school has some 900 students and graduates about 300 chiropractors each year. It can take as few as six years to become a chiropractor, three years college, and three years of chiropractic college. Tuition is $4,170 each trimester of which there are a total of ten.

There are 15 classrooms and laboratories and an ample supply of x-ray film viewing boxes, and some strange looking examining tables designed for spinal manipulations and adjustments, as explained by the tour guide. I noted some five medical doctors on the faculty. There was no evidence of any research departments or activities mentioned by the guide.

The library contained a number of standard medical texts but no source of medical journals or other scientific resources. I was given, by the president of the college, a large package of information about chiropractic and a book entitled, *Principles and Practice of Chiropractic*,[1] apparently the chiropractic "bible." It was to me a 600 page failed effort to explain exactly what chiropractic is supposed to be. However, it contained no evidence of effectiveness in diagnosing or treating any specific disease. An insert classified chiropractic as one of the major 45 "alternative health care methodalities."

After the tour, in a prearranged interview with the dean, I posed the following paraphrased questions:

Dean, I am a medical columnist and admit to a scientific bias. I believe that chiropractic is the biggest medical hoax ever perpetrated on the American public. Please give me any evidence to the contrary for starters, of the 14,000 or so diseases afflicting mankind, name one which chiropractic has been proven scientifically to benefit or cure."

"Oh," replied the dean to this confrontational challenge, "We do not treat disease. We treat wellness. We keep people healthy with periodic spinal 'adjustments.'"

"But," I pursued, "Chiropractic, in over 100 years has failed to demonstrate what is supposedly being adjusted. Despite surgery, autopsy, and sophisticated imagery, no spinal vertebral subluxation has ever been seen, or shown to press on a nerve interfering with the passage of energy down that nerve, causing disease, as chiropractic claims."

"That is because a vertebral subluxation is not an anatomical lesion. It is a 'dynamic lesion.' We call it a DSL, or ESL, a dynamic or functional spinal lesion." These definitions were corroborated in the chiropractic text.

At this point after a series of similar questions and answers, I suggested to the dean that there was, in essence, clearly no satisfactory evidence of such an entity as chiropractic as defined, and that they should convert-their college into a medical school, and abandon this phoney chiropractic theory.

It was easy to see how young people could easily be seduced into this field by becoming a "doctor" in a few shorter and less expensive years. The college ambiance, the academic-appearing catalogue, neat, shiny, scientific-looking classrooms, certainly must be enticing.

Following this visit, I introduced a bill into our legislature which would have banned the use of chiropractic on children, and any manipulation of the neck. The bill was buried in the public health committee without a hearing. It will be resubmitted next year.

Some 69,000 chiropractors are now licensed in all our 50 states, and some 2,000 new ones are graduating yearly from our 16 chiropractic colleges.[2] It is sad that there seems to be so little effort in health-care reform to make clear to the public and the legislature just how expensive and serious a health matter this form of alternative care has become, and so little being done about it.

REFERENCES

1. Haldeman S: *Principles and Practice of Chiropractic.* 2nd ed. Appleton and Lange, subsidiary of Paramount Publishing, East Norwalk, Conn: 1992.
2. American Chiropractic Association, Personal communication, as of 1995.

L. A. Chotkowski, M.D.
Kensington

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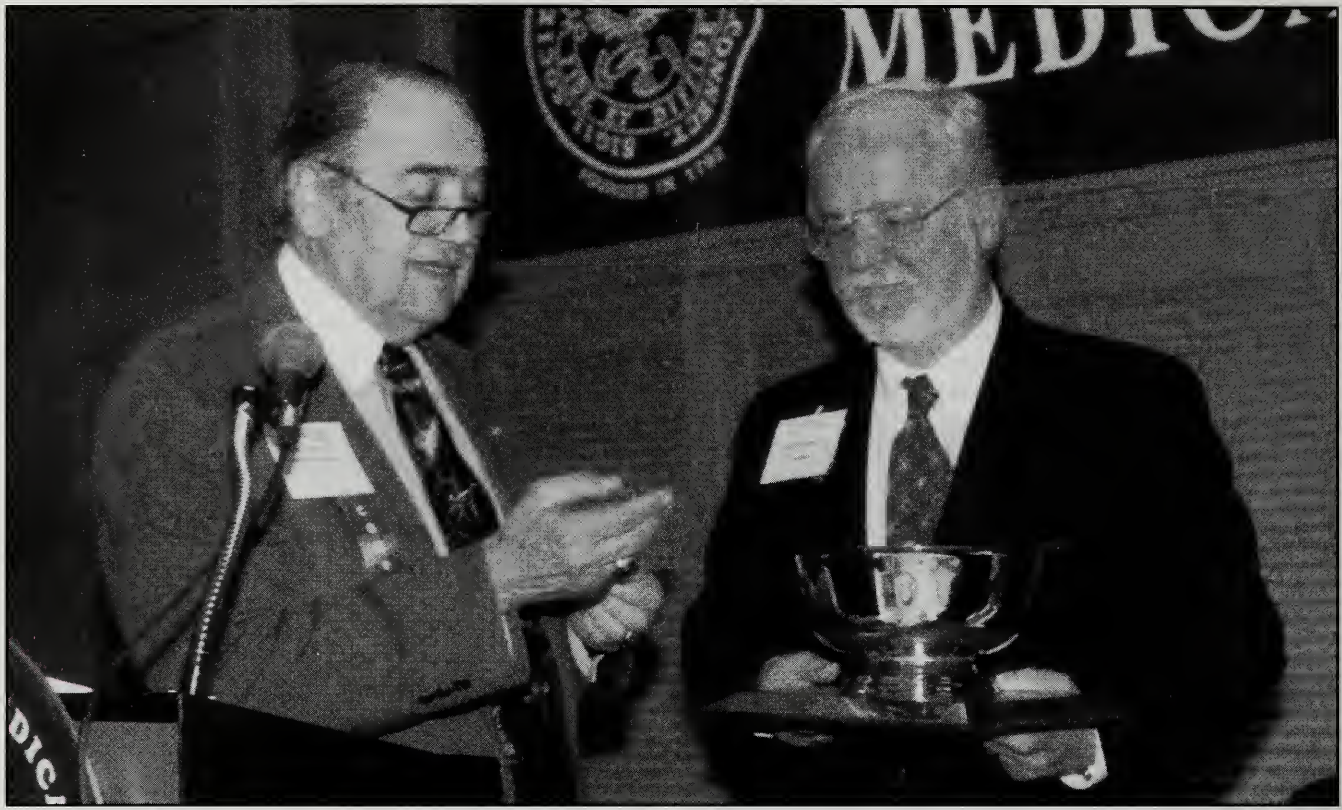
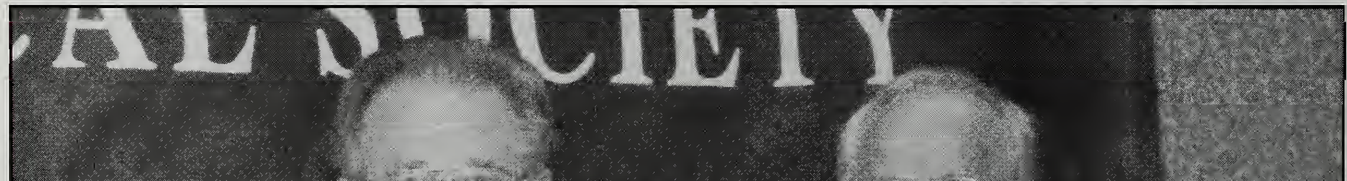


Joseph C. Czarsty, M.D., Chairman of the CSMS Council presenting a silver bowl and past president's pin to Michael M.Deren, M.D., New London, past president.



Stanley J. Keating, Jr., M.D., Hartford, new president, receiving the gavel from Michael M. Deren, New London, past president.

From the Executive Director's Office

SUMMARY OF PROCEEDINGS
CSMS HOUSE OF DELEGATES—ANNUAL MEETING
RAMADA INN, MERIDEN—14 MAY 1997

Reports and Addresses

The House received reports, addresses, and/or remarks from the incoming President and the retiring president, secretary, treasurer, the chairman of the Council, delegates to the AMA, chairman of the Board of Directors of COMPAC, the CSMS executive director, CSMS/IPA, Connecticut Medical Insurance Company (CMIC), standing committees, representatives and advisors, and delegates from the New Hampshire Medical Society and the Medical Society of the State of New York. All of the reports and resolutions were published in the Handbook that was distributed to the delegates. The addresses of the Executive Director, Tim Norbeck, and the retiring president, Michael M. Deren, M.D., appear at the conclusion of this summary. The inaugural address of the new president, Stanley J. Keating, Jr., M.D., appears as the President's Page in this issue.

PRINCIPAL ACTIONS TAKEN
Election of Officers and Others

The House voted to approve the published report of the Nominating Committee (the Council). Officers elected were:

President: Stanley J. Keating, Jr., M.D., *Hartford*
President-Elect: Craig W. Czarsty, M.D., *Oakville*
Vice President: Stuart B. Mushlin, M.D., *Stamford*
Secretary: Brian Van Linda, M.D., *Avon*
Treasurer: Robert R. McDonnell, M.D., *New Haven*
Speaker of the House of Delegates:
Howard J. Wetstone, M.D., *Hartford*
Vice-Speaker of the House of Delegates:
John P. Bigos, M.D., *New London*
Councilor-at-Large:
Michael M. Deren, M.D., *New London*

Delegates and Alternates to the American Medical Association

Anthony P. Redmond, M.D., Greenwich (D)
1 January 1998 to 31 December 1999
Joseph C. Czarsty, M.D., Waterbury (A)
1 January 1998 to 31 December 1999
Jerome Bobruff, M.D., New London (D)
1 January 1998 to 31 December 1999
Sultan Ahamed, M.D., Norwich (A)
1 January 1998 to 31 December 1999
Jerome K. Freedman, M.D., Branford (D)
1 January 1997 to 31 December 1998
Neil H. Brooks, M.D., Rockville (A)
1 January 1997 to 31 December 1998
Joseph S. Sadowski, M.D., Hartford (D)
1 January 1997 to 31 December 1998
Dickerman Hollister, Jr., M.D., Greenwich (A)
1 January 1998 to 31 December 1999
Mehdi S. Eslami, M.D., Waterbury (D)
1 January 1997 to 31 December 1998
John B. Franklin, M.D., Hartford (A)
1 January 1997 to 31 December 1998

In approving the report of the Nominating Committee, it was also voted to establish a new standing Committee on Data Study and increase the Committee on Medical Aspects of Sports to 27 members.

Following are the actions taken on the business that came before the House:

RESOLUTION: CONSUMER PROTECTION: QUALITY IN MEDICAL POLICY AND MEDICAL REVIEW

This following resolution is an item of "old business" which was referred to the Council by the House of Delegates for action with the suggestion to support for incorporation in the Patient Protection Bill. The resolution was referred to the Committee on Legislation for implementation.

Resolved, that the Connecticut State Medical Society recommend the establishment of an independent healthcare appeals committee within the Department of Consumer Protection composed of Connecticut physicians nominated by the Connecticut State Medical Society, and be it further

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Resolved, that this resolution be forwarded to the governor of the State of Connecticut and other appropriate bodies who are responsible for quality of medical practice and this resolution be forwarded to the AMA for consideration.

The Committee reported that CSMS representatives met with the governor's chief of staff to discuss the patient protection act and the issues of managed-care reform. The patient protection act calls for the establishment of an independent appeals mechanism, but does not specifically request that office to be placed in the Department of Consumer Protection. A copy of the resolution had been forwarded to the AMA.

RESOLUTION: FINANCIAL INDUCEMENT FOR MANAGED HEALTH-CARE ORGANIZATIONS TO PAY CLAIMS IN A TIMELY MANNER

The following resolution was introduced by the Fairfield County Medical Association and approved by the House of Delegates:

Resolved, that the Connecticut State Medical Society shall pursue all legislative and regulatory channels to insure that managed health- care organizations compensate in a timely manner the physicians and other providers for all clean claims, and if this is not accomplished, then require that all managed health-care organizations must pay not only the original claim but an interest amount sufficient enough to encourage the timely payment of all clean claims.

RESOLUTION: ETHICAL CONSIDERATIONS IN MANAGED-CARE ORGANIZATIONS

This resolutions was introduced by the Fairfield County Medical Association and adopted with amendments as follows:

Resolved, that, since MCOs that favor profit over access and quality of care may involve for physicians an unethical relationship, the CSMS Committee on Ethical and Judicial Affairs be requested to evaluate the impact of adverse financial incentives on the ethical obligations of participating physicians and develop a succinct set of guidelines to assist physicians in formulating an appropriate response to these policies.

Two late resolutions were introduced by the Hartford County Medical Associations

One resolution concerned with jury duty services and physicians was not approved.

The resolution on Hemochromatosis was not accepted for hearing.

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RESOLUTION: JEROME K. FREEDMAN, M.D.

It was brought to the attention of the House that Jerome K. Freedman, M.D., will be retiring and leaving Connecticut. Dr. Freedman is a past president of CSMS and currently an AMA delegate. Dr. Freedman has held many posts at the county, state, and AMA level and his idealism and efforts have been unsurpassed. The following resolution was approved by acclamation.

Resolved, that the Connecticut State Medical Society House of Delegates recognize all of the accomplishments of Dr. Freedman during his distinguished career and rise to applaud him and wish him well in the next phase of his life.

PRESENTATIONS AND AWARDS

American Medical Education and Research Foundation (AMA-ERF)

Dr. Deren presented the following awards:

University of Connecticut School of Medicine ...$7,235—Bruce D. Browner, M.D., Chairman, Department of Orthopedic Surgery, accepted the check.

Yale University School of Medicine ...$8,955—Myron Genel, M.D., Associate Dean for Government and Community Affairs, accepted the check.

Connecticut Science Fair Awards

Dr. Deren announced the following awards:

First Place—*Senior Division*—Rose Lopez, tenth grader, Hartford Public High School
Project: "Bacterial Transformation"

Second Place—*Senior Division*—Stephen Gross, tenth grader, Ellington High School
Project: "The Effects of Different Colored Light on Phototropism"

First Place—*Junior Division*—Jeff Muccilli, seventh grader, Adams Middle School, Guilford
Project: "The Effects of Aging on Visual Memory"

Second Place—*Junior Division*—Halden Williams, eight grader, Ledyard Middle School, Gales Ferry
Project: "Fun with Fruit Flies"

The first place winners received a plaque and a check. The second place winners received a plaque and a book.

The CSMS Distinguished Citizen Award

The first CSMS Distinguished Citizen Award was awarded to Mr. Robert Macauley, Founder and CEO of AmeriCares, a private, nonprofit disaster relief and humanitarian aid organization that provides immediate response to emergency medical needs and supports long-term health-care programs for all people around the world.

Mr. Macauley's personal dedication to AmeriCares mission earned him this year's Albert Schweitzer Award and has earned the organization recognition by *Money* Magazine as the number one best charity in the Country. Since the early days, AmeriCares has delivered more than one billion dollars worth of life-saving medicines and relief supplies to needy people in the United States and in more than 90 countries. A Waterford crystal globe inscribed with AmeriCares, symbolizing AmeriCares and Mr. Macauley's far reaching efforts, and a check for $5,000 to AmeriCares to assist it its worldwide efforts to provide relief for all, irrespective of race, color, creed, or political persuasion, was presented.

Award to Retiring President

Dr. Joseph Czarsty, chairman of the Council, presented a Paul Revere silver bowl and past president's pin to Michael M. Deren, M.D.

Dr. Deren gave the Oath of Office to the new president, Dr. Stanley J. Keating, Jr., Hartford, and presented him with a gavel and a presidential medallion inscribed with his name and date.

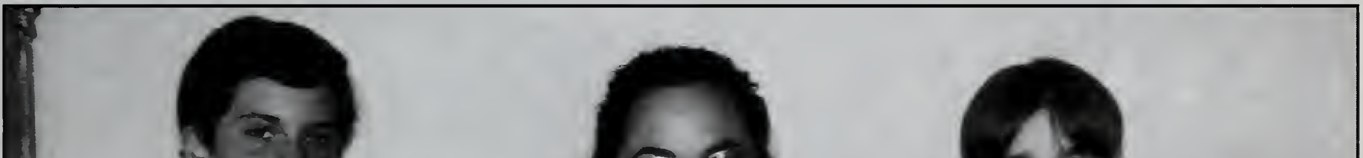
CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the *Journal* for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the *Journal* office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511



1997 Science Award Winners (from left to right) Jeff Muccilli, Rose Lopez and Halden Williams, proudly display the awards they received from CSMS at the House of Delegates Annual Meeting held at the Ramada Inn in Meriden.

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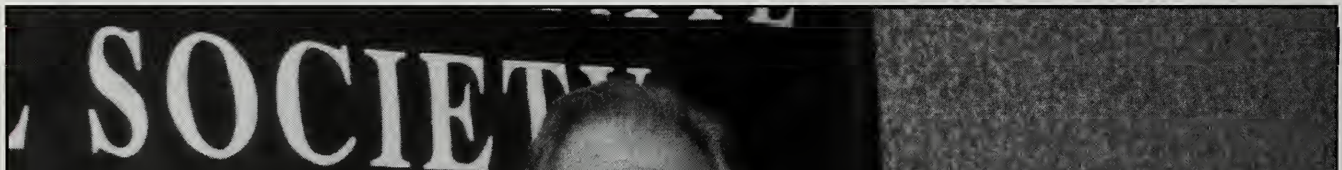
Stanley J. Keating, Jr., M.D., Hartford, with his wife Patricia and son Stanley.



Newly elected president, Stanley J. Keating, Jr., M.D., Harford, giving his inaugural address at the House of Delegates Annual Meeting held at the Ramada Inn in Meriden.

HEALTH SCIENCES AND

Leadership and Unity The Formation of the CSMS/MSO: *M.D. Advantage*

CSMS Annual Meeting—House of Delegates

14 May 1997

MICHAEL M. DEREN, M.D.

THIS year marks the 150th anniversary of the founding of the AMA in 1847 by an angry young reformer from New York State named Nathan Smith Davis (see pp. 353-9, this issue of *Connecticut Medicine*). Dr. Davis felt cheated following his six months of inadequate medical school education during which the same lectures were actually given twice. He wanted to reform medical education but realized that national standards were needed, since if New York State elevated its standards and consequently its costs, medical students would go to nearby states to obtain a less expensive, less vigorously earned medical degree.

Nathan Davis Smith had been active in his county medical society for nearly 10 years when in 1845 he introduced a resolution suggesting that the New York State Medical Society convene a national convention to develop uniform educational standards. In May 1847 that Convention, chaired by Dr. Jonathan Knight of New Haven, met at the Academy of Natural Sciences in Philadelphia. The 250 convention delegates voted to adopt uniform educational standards, to form a national medical society called the AMA, and to adopt a national code of ethics for its physicians.

Connecticut physicians took a leadership role in the founding of the AMA 150 years ago and today Connecticut physicians continue in a leadership role. CSMS physicians led by the Council, your governing body, have taken another bold step to unify and lead physicians by giving them the tools to take back control of medicine.

At the beginning of my year as your president I spoke of managed care and how we should control it, lest it control and dominate us. At midyear I spoke of physicians going on the offensive to insure quality care for our patients. Now, at the conclusion of my year as your president, your Connecticut State Medical Society will operationalize this philosophy responding to its members' needs and requests. We will turn rhetoric into implementation, we will turn words into action, we will strengthen your position as an independent, solo, or group practitioner.

CSMS leaders from all the counties have responded promptly and proactively to preserve the independence and integrity of each physician's medical judgment and to protect the sanctity of the patient-physician relationship from an increasingly perverse health-care marketplace.

The CSMS has responded by taking a leadership role with a new, momentous, and exciting giant step in assisting you, its members, to control your practice and give the best quality care we all wish to give to our patients, the people of Connecticut. That step is the formation of a statewide physician-owned and physician-controlled medical service organization or MSO called *M.D. Advantage*. It will help unify physicians in their effort to take back control of the House of Medicine.

The CSMS has a known excellent track record of forming two previous statewide physician-owned and directed entities, M.D. Health Plan and Connecticut Medical Insurance Company, CMIC, in response to threats to patient care and physician autonomy.

This is no less a time of threat and peril for patients and physicians. The CSMS can respond no less now in vigor and imagination. Our MSO, *M.D. Advantage*, will serve CSMS physicians no less than does CMIC.

The first step in forming *M.D. Advantage* was to obtain a feasibility study, market analysis, and due diligence. The CSMS Council authorized this with a unanimous vote. The consulting firm of Alliance for Healthcare Associates of California under the superb and excellent direction of James Darnell and Steven Hoffman was engaged to do the study.

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The results of the feasibility study which evaluated 60 group practices involving 200 physicians were truly astonishing. The study showed an immediate, critical need for physician practice services. Predatory physician practice management groups have been prowling the state. Several physician groups were about to sign on the dotted line with national publicly traded companies showing the urgency of doing something to assist physicians to remain masters of their profession. That is why we have moved so swiftly to form *M.D. Advantage*.

The importance of forming a physician-friendly CSMS MSO was underscored when Maine and Vermont state medical societies recently announced they would begin plans to form a similar type MSO. It was especially important for the CSMS to take this proactive position when the Connecticut Hospital Association (CHA) announced it would introduce state legislation to prohibit any group from forming an MSO unless they did so exclusively with a hospital. The CSMS helped defeat that legislative initiative, but nevertheless the CHA, among others, may well soon be offering a similar menu of state level MSO services.

Some physicians may wish to join this initiative or to join a Phycor or Phymatrix or others, but they should not *have* to do so. They should have another option and the CSMS is going to offer that option in the form of *M.D. Advantage*. If we did not offer this we would have failed a large number of our members.

The feasibility study showed that our members are clamoring for MSO services. Based on these findings and responding to member physician requests, a second unanimous vote by the CSMS Council authorized us to go forward and seek a physician- friendly strategic partner to implement this plan.

After looking at several privately-held and publicly-held organizations that build MSOs and have the experience and financial muscle to do so, we selected a strategic partner which was approved overwhelmingly by the Council. That strategic partner is the Med3000 Group, Inc.

Who is Med3000? It is a joint partnership between an international pharmaceutical company and a physician service company from Pittsburgh, Pennsylvania. The pharmaceutical is Novartis recently created by the merger of CIBA/Geigy and Sandoz, Inc., to form the largest pharmaceutical company in the world with billions in assets. Med3000, for its part, has already developed and administered successful physician-owned MSOs in several states, including Connecticut.

Med3000 has the necessary physician-friendly philosophy. They too believe as does the CSMS that only doctors, not insurance companies, should be in control of health care. Med3000 believes as does the CSMS that we need physician-owned and physician-directed health-care entities and together we will build them.

How will this be done? *M.D. Advantage* is an entity formed by the CSMS and Med3000. The CSMS will contribute its brand equity, its good name, its cachet, and the information from the feasibility study. Med3000, our strategic partner, will contribute the capital and infrastructure.

What are the terms of this joint partnership? There will be a 51/49% equity split, with CSMS having 51% and Med3000 49%. There will be a 50/50 governance arrangement.

Yesterday, the day following approval by the CSMS Council, we were ready to operationalize the program, and indeed CSMS/Med3000 as *M.D. Advantage* jointly spoke with a large IPA last night in Fairfield County. As part of the glamorous life as your president, following that IPA meeting, Tim, our partners, and I had cheeseburgers at a Bridgeport McDonalds at 10:30 P.M. My last night as your president and Tim treated me to McDonalds! I just wanted our new president, Stan Keating, to know what he could look forward to. Yesterday we also selected an office site in Hamden near CSMS headquarters.

What can and will *M.D. Advantage* do? Among *M.D. Advantage's* critical services will be its information system and with it the CSMS will lead physicians into the future. The future is up to each of us, as our destiny is something we create. We need to be ahead of change as the future belongs to those who get there first. *M.D. Advantage* will help CSMS physicians get to the future first. Remember, if you are not the lead dog, the view never changes.

M.D. Advantage is a physician-owned, physician-directed regional services and group development management company that offers services to physicians in two areas: 1) Office management services such as billing and coding information services, group purchasing, etc. 2) Financial services such as individual risk contracting and negotiating, practice management, and practice integration, among others.

M.D. Advantage will give physicians an economic, competitive edge and allow doctors the option of keeping their practices and not selling them to publicly traded companies or to hospitals.

M.D. Advantage is innovative and unlike other statewide MSOs for two distinct reasons. First it is an equal partnership and collaboration between a physician-friendly management group and a state medical society. It is not a contracting out of services or simply selling the good name of your medical society. Second, *M.D. Advantage* will function not only at the state level but also at the local level. *M.D. Advantage* will build local physician organizations, local MSOs, and IPAs as well as operationalize a statewide MSO with a menu of services. It is the interaction and cooperation between local physician entities and

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the statewide MSO that is so important, necessary, and key for the success of a physician-driven, physician-controlled solution to the dilemma medicine faces today.

M.D. Advantage is not an end itself. It is a tool, a means to an end. What is that end? It will enable you to keep your practices, to keep your patients, and to keep your professional soul. It is a means to place MDs in their rightful place at the head of patient care.

As with any new tool, it can be used positively or negatively. Physicians must use the MSO positively as a weapon in their arsenals to fight for control of medical care in the market arena. When we physicians enter the medical marketplace we should have a higher standard, a higher ethic. I use the word weapon when describing *M.D. Advantage* deliberately. Control of medicine was forcefully taken from physicians by business and for-profit predatory managed-care insurance companies without our input. We must fight to get it back. This is a war we cannot lose.

Our strategy for *M.D. Advantage* from the beginning is to help all physicians and not just those in Connecticut. Our strategy could have a national impact. The power of physician-driven partnerships is that strong. The Phycors and Med Partners of the world beware: the competition is here, we physicians know something about hostile takeovers. Predatory managed-care companies beware. Physicians are on the march. They must realize as Emperor Hirohito eventually did when he said, "The war situation has developed not necessarily to Japan's advantage."

M.D. Advantage must be used for the good of patients and the profession. It is not fatuous idealism on my part to inaugurate *M.D. Advantage* with a high purpose. This is not begotten out of froth and foam. Any medical enterprise which does not put the good of the patient first is doomed to inevitable failure. Ultimately we will be judged by future generations how we use such tools. They must be used for the good of patients, for the good of society.

As we enter more fully the business side of medicine remember that the delivery of health care is a moral enterprise and be sure not to adopt the practices of predatory for-profit managed-care entities. Any physician who subordinates patient values and advocacy to anything else is in danger of losing his or her individual professional soul.

M.D. Advantage could not have been possible without the help of all physicians on the CSMS council which assisted in the developing and planning. These planning physicians come from large and small counties, from primary care and specialty care. The steering committee deserves special mention and was comprised of the following representatives: small counties Dr. James Watson (Windham) and Dr. John Bigos (New London); Hartford County Dr. Joseph Sadowski and Dr. Roger Beck; New Haven County Dr. Joseph Czarsty, Dr. Jerome Freedman, and Dr. Mehdi Eslami; Fairfield County Dr. Stuart Mushlin and Dr. Edward Kamens.

Above all, the CSMS staff headed by Tim Norbeck brought this plan to fruition. It could not have come this far, this fast without Tim Norbeck's expert administrative and executive assistance and direction. The CSMS/MSO, *M.D. Advantage*, is indeed a new, exciting program that will enable the CSMS to lead and unify physicians in their effort to take back control of the House of Medicine.

To paraphrase John F. Kennedy, in the long history of the medical profession, only a few generations have been granted the role of defending the profession in a time of maximum peril. It is our generation, you here today, who must have the fire and determination to defend the profession and our patients with a devotion which will light the way for future generations of patients and physicians.

I ask that all Connecticut physicians put aside their differences and join the CSMS in its leadership and unifying role and work together to place the medical profession once again in its rightful place—in control of patient care.

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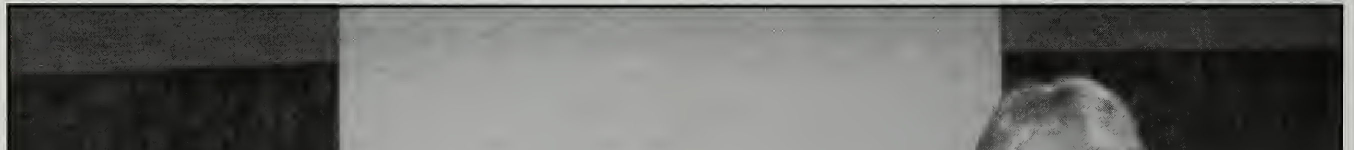
Newly elected president-elect Craig W. Czarsty, M.D., Oakville, with his father Joseph C. Czarsty, Chairman of the CSMS Council.



Jerome K. Freedman, M.D., Delegate to AMA, Stanley J. Keating, Jr., M.D., President, Sultan Ahamed, M.D., Vice Speaker, Joseph S. Sadowski, M.D., Delegate to AMA, at the reception for the president.

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Address of the Retiring President

CSMS Annual Meeting—House of Delegates

14 May 1997

MICHAEL M. DEREN, M.D.

THIS concludes my year as your president. It has been the very best and most rewarding year of my professional life and although some days have seemed endless, the year has flown by. I thank you all for the privilege of having served as your president.

Being the immediate past president is the best job in the world, as it has all the prestige and none of the responsibility. It's like being the caretaker at a cemetery. There's a lot of people under you, but no one is listening. As Bob McAfee, past AMA president says, "it's like being the corpse at a funeral. The ceremony can't get started without you and no one expects you to say very much." There is an old saying that if you find a turtle on the top of a fence post, you know it had to have had help getting there. So too, if I have had a successful year, I had to have help getting there. I would like to pay homage to some of those people who helped me this past year and there are many to thank.

If I and others have been able to see so far this past year and have had a vision for the CSMS it is because we had the help and stood on the shoulders of giants.

We have been able to see so far in professional liability issues because we stand on the shoulders of Mehdi Eslami, Joseph Sadowski, Stanley Keating, Sully Ahamed, and Kevin Dowling in their work forming and guiding CMIC.

We have been able to see so far in managed care issues because we stand on the shoulders of Jerome Bobruff who was so instrumental in the formation of the originally not-for-profit Physician Health Service (PHS) and its IPA with its equity position. Jerry has also been of invaluable help advising me on a host of issues. I could not have done it without him.

... because we stand on shoulders of William Whalen, Vince Catrini, Tim Norbeck, Robert Brunell and so many others who helped form CSMS-IPA and M.D. Health Plan.

... because we stand on the shoulders of the likes of Ed Kamens who so ably led CPRO and so many other programs in our state. Ed Kamens, a true state physician leader.

...because we stand on the shoulders of one of the very best physician chairs of our legislative committee, Dr. David Parke, someone who has unsurpassed experience and competence in the legislative arena having testified before over 30 state legislatures as well as Congress. To him and Mag Morelli of the CSMS staff more than anyone go the credit for our excellent legislative agenda and success this year.

... because we stand on the broad shoulders of Roger Beck in his leadership of COMPAC; Howard Wetstone our able Speaker of the House; Joseph Czarsty our council chairman for nearly 10 years; Robert McDonnell our long time and dedicated treasurer; Anthony Redmond a tireless CSMS advocate, and Dickerman Hollister our energetic, hard working immediate past president. Special appreciation goes to Jerome Freedman who is stepping down this June after numerous years of dedicated service to the CSMS as president and AMA delegate.

All physicians have been able to see so far because we stand on the shoulders of a true giant in his own field. Tim Norbeck is a national figure in organized medicine, the immediate past national president of AAMSE, the American Association of Medical Society Executives. Tim Norbeck is undoubtedly the very best medical society executive in the country, bar none, ever. His leadership and vision are unsurpassed. He was truly the inspiration and driving force behind our MSO, *M.D. Advantage*. There is no one who has done more for physicians, no one

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who is more a true friend of doctors, no one more dedicated to the profession.

The CSMS staff: Bob Brunell, Josephine Lindquist Wanda Jacques, Mag Morelli, Cam Staples, Marc Sullivan, Patti Mastriano, Ann Luby, Rhonda Hawes, Deborah Maynes, Linda Oertel, and Angela Chabinec who are the very best staff any president could ever have. Special thanks goes to Michele Norbeck and Dr. Neil Gray for their developing the Physician Health Program and Susan Schaffman for her work on the CSMS Expo.

All these women and men have carried us through innovative programs, good times and difficult times, long tumultuous council meetings, and legislative agendas over many, many years. These men and women have done so much for physicians and the CSMS that the warp and woof of the society is inextricably entwined with their ideas, dedication, and contributions and so it can truly be said that as long as the CSMS lives, these men and women shall live. To them not only I, but we all owe our professional appreciation. Thank you.

On a personal note I would like to thank my wife AnneMarie for her help, support, and willingness to share me with the CSMS, a demanding mistress. My office staff Stacey Kozlowski, Elizabeth Twitchell, and Sharon Teel who are truly happy to see this year end so my schedule will be less hectic, I owe so much and thank them for their patience and extra effort.

Thank you to the entire CSMS Council and particularly the New London County Medical Association Delegation, especially Joseph Zeppieri, John Bigos, and Thomas Lesnik for their support and help.

On a personal note, I am a medical politician who very much wishes to return to the private practice of thoracic surgery in Eastern Connecticut. My year as your president has been exciting, fascinating, rewarding and I would do it again. My foray into the world of medical leadership and policy making, my attempt at a vision for the medical society, my efforts on behalf of physicians have been inspired by one group, and that is my fellow physicians in New London and Norwich, the men and women physicians I work with every day.

It was they from whom I sought advice, it was they to whom I listened, listened to their concerns and problems and pleas to do something about managed care. This plea led to the formation of our statewide MSO, *M.D. Advantage*, with its great potential to return physicians to their rightful place as head of patient care.

Patients are the focus of all our efforts, but physicians must be the ones giving the care, not business people. My physician colleagues in New London County have never lost their patient care focus.

My job has been to return patient care leadership to physicians. That inspiration came from New London County doctors and I thank them all for that inspiration. It was my fellow physicians and their sterling quality and their unsurpassed dedication to patients which have made our efforts worthwhile.

We are all members of by far the very greatest profession ever. It surpasses all others in dedication to humanity, in skill, intelligence, and kindness to patients. What we do for the profession we do for humanity. Remember the profession; what we do for it, we do for our patients. Thank you and goodbye.

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IN MEMORIAM

CULLINA, JOSEPH C., George Washington University School of Medicine, 1948. Dr. Cullina opened his private practice in pediatrics in West Hartford in 1954. He was appointed chief of the pediatrics outpatient department and associate director of the department of pediatrics at St. Francis in 1973 and in 1980, was named director of ambulatory services. Dr. Cullina was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Cullina died 10 May 1997 at the age of 74.

FAIAZ, ESMAIL K., Faculty of Medicine University of Teheran, Iran, 1951. Dr. Faiaz began practicing obstetrics and gynecology at Mount Sinai Hospital in 1960 and was affiliated with the hospital until 1991. In 1991, he was named director of ambulatory services in obstetrics and gynecology at St. Francis Hospital. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society, where he served on the Committee on Maternal Morbidity and Mortality and the Committee on Perinatal Morbidity and Mortality from 1968 to 1974. Dr. Faiaz died 12 May 1997 at the age of 75.

JORDAN, ROBERT H., Medical College of Virginia Health Sciences Division of Virginia Commonwealth University, 1933. Dr. Jordan, an internist, practiced medicine in New Haven from 1938 until 1980. He was a clinical instructor in medicine at the Yale School of Medicine. Following his retirement from private practice, Dr. Jordan served at Connecticut Hospice in Branford for two years. Dr. Jordan was a member of the New Haven County Medical Association, the Connecticut State Medical Society, where he served on the Committee on Insurance from 1963 until 1982, and the American Medical Association. Dr. Jordan died 11 April 1997 at the age of 88.

LEE, HEE JONG, Severance Medical College Yonsei University, Seoul, Korea, 1964. Dr. Lee was the medical director of the Rehabilitation Center in Bridgeport for 17 years. Specializing in physical medicine and rehabilitation, Dr. Lee was a staff member at Bridgeport Hospital and was in private practice in Bridgeport. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society and the American Medical Association. Dr. Lee died 27 May 1997 at the age of 58.

LYNCH, MARK E., Harvard Medical School, 1957. Dr. Lynch practiced medicine at the Avon Medical Group, a practice he started 36 years ago. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Lynch died 27 April 1997 at the age of 65.

NAKHOUL, JABBOUR, Faculté de Medecine de l'Universite de Geneve, Switzerland, 1953. Dr. Nakhoul practiced medicine in West Hartford for 38 years. He served as medical director of the Kimberly Hall Convalescent Home from 1972 to 1985 and the Windsor Hall Convalescent Home from 1960 to 1985. Dr. Nakhoul was on the staff of St. Francis Hospital from 1960 until his retirement in 1996. He was a member of the Hartford County Medical Association where he served as a delegate to the Connecticut State Medical Society from 1969 to 1971, the Connecticut State Medical Society, and the American Medical Association. Dr. Nakhoul died 6 May 1997 at the age of 71.

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Connecticut State Medical Society Creates Statewide MSO to Assist Physicians in Leveling Playing Field

In keeping with a rich history of leadership for physicians in the state, the Connecticut State Medical Society (CSMS), last week announced the creation of "***M.D. Advantage***," a statewide Management Services Organization (MSO). CSMS, in partnership with MED3000 Group Inc., created ***M.D. Advantage*** in order to offer physicians the opportunity to facilitate the development and creation of sustainable physician-owned organizations.

The CSMS Council decision came as a result of a year long marketing research and feasibility study of integration activities and alternatives for physicians. The study, which involved all Connecticut counties, found that physicians want a full range of practice management, information systems technology, and network development services, without losing their clinical, professional, and business autonomy. "Physicians want control of their practice and their future" commented Michael Deren, M.D., CSMS immediate past president "and ***M.D. Advantage*** will offer a physician-friendly and physician-directed alternative to the current hospital, payor, and commercial management company choices."

In a further move to select a strong capital partner, the CSMS Council chose MED3000 Group Inc., a privately held physician-practice management company based in Pittsburgh, Pennsylvania, which has developed and administered successful physician-owned local MSOs in several state including Connecticut. MED3000, with history in physician-practice management, already embraces the physician partnership approach and offers a strategic partnership due in part to Novartis Pharmaceutical, a strong financial investor in MED3000.

M.D. Advantage, using a base infrastructure which is currently up and running, will establish an MSO development office in New Haven, and is expected to be fully operational within several weeks. "We have no time to waste" noted Tim Norbeck, CSMS Executive Director, "the Council's decision took into account the immediate need for the services. "As with previous challenges to the practice of medicine in our state, physician leaders from all counties have responded promptly and proactively, to preserve the independence and integrity of each physician's medical judgement, and to protect the sanctity of each patient-physician relationship from an increasingly perverse health-care marketplace. After extensive evaluation we believe MED3000 best represents the physician's interests and possesses the infrastructure to back it up."

For more information about ***M.D. Advantage***, call CSMS at (203) 865-0587.

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Michele R. Norbeck
Director

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The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

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The Physically Challenged Golf Association was established in 1995 with the mission to promote the game of golf to the physically challenged (ie, those afflicted by stroke, amputation, total joint replacement, neck or back surgery, musculo-skeletal diseases, etc.) The association recently received non-profit status and has been endorsed by the Connecticut State Medical Society—Sports Medicine, Connecticut PGA, and the National Amputee Golf Association. With the help of the Connecticut PGA several clinics are being conducted. Help is needed at any of the clinics. Please call Kathleen Hickey Kane, MS., PT., ATC, for more information at the Connecticut Chapter of the Physically Challenged Golf Association at (860) 828-6446 or write P.O. Box 27, East Berlin, Connecticut.

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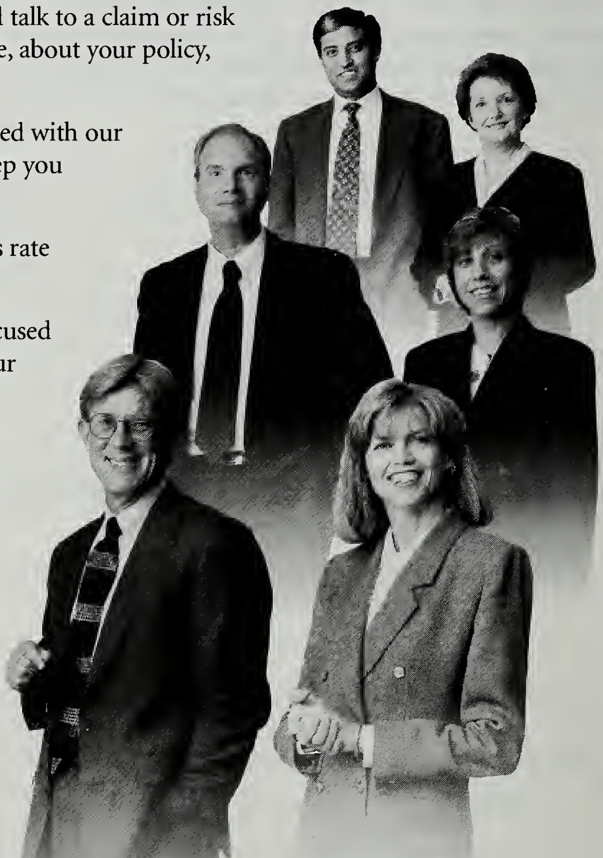

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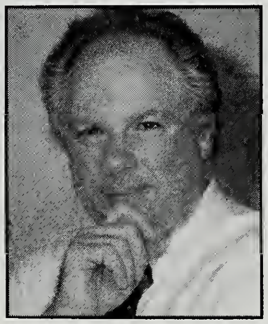

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A Regional Weaning Center for Patients Requiring Mechanical Ventilation: An 18-Month Experience

PAUL J. SCALISE, M.D., DANIEL A. GERARDI, M.D.,
CHRISTINE M. WOLLSCHLAGER, M.D., AND JOHN J. VOTTO, D.O.

ABSTRACT—This report reviews the outcomes of patients on mechanical ventilation admitted to a new regional weaning center. We reviewed the records of 47 patients admitted to the weaning center over an 18-month period. All patients had a tracheostomy, were ventilator dependent, and considered difficult to wean by their referring physician. The mean days of ventilator dependence prior to transfer to our facility was 86 days, with a range of 21 to 332 days. Patients were admitted to a 12-bed weaning unit at our chronic disease and rehabilitation hospital and assessed by a multidisciplinary team of physicians, nurses, and therapists. Thirty patients were successfully weaned from prolonged mechanical ventilation and subsequently discharged from our unit.

These data indicate that the majority of difficult to wean patients admitted to our regional weaning center were successfully liberated from prolonged mechanical ventilation.

Introduction

THE majority of patients requiring mechanical ventilation (MV) in the intensive care unit (ICU) are safely removed from this support within hours to days of its initiation. Certain patient populations require prolonged mechanical ventilatory support, defined as requiring MV for greater than 21 days.[2] This group has been estimated at 5% of those who need ventilatory support.[1] Weaning or liberating these patients from mechanical ventilation becomes complex, often consuming substantial time and resources.[3] Most will be successfully weaned and extubated, but a few will continue to require mechanical ventilatory support. For a variety of reasons, these patients, are better served out of the ICU environment. Specialized weaning units have been developed to address the specific medical, financial, and psychosocial needs of these patients.[2,4-6] We report the experience in the first 18 months of a new regional weaning center (RWC).

Methods

A retrospective chart review was completed of 47 patients admitted to our regional weaning center over an 18-month period (September 1994 to March 1996).

Results

The Hospital for Special Care is a 200-bed chronic disease and rehabilitation hospital. Fifty-five ventilator-dependent patients constitute the majority of our chronic disease population. We recently opened a 12-bed spe-

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Abbreviations Used in Text

ICU = intensive care unit
RWC = regional weaning center
MV = mechanical ventilation
LOS = length of stay
ABG = $P\underline{a}o_2$, $\underline{B}$UN, and $\underline{G}$ender

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cialty unit dedicated to weaning long-term mechanically ventilated patients. There were 47 patients admitted from 1994 to 1996. Our admission criteria require patients to have a tracheostomy tube, be ventilator-dependent, and show some evidence of spontaneous respirations. All medically stable patients without malignant arrhythmia's (sustained ventricular tachycardia) were admitted with a primary diagnosis of respiratory failure. Thirty of the 47 patients were successfully liberated from mechanical ventilation. Seventeen of these patients were discharged to home and 12 were discharged to a skilled nursing facility. One died after successful extubation from unknown causes. Ninety-four percent of these patients were alive six months following discharge. Eighteen patients remained ventilatory dependent, of these, 10 died of their underlying disease after weaning attempts were discontinued; the remainder are patients in our long-term ventilator-dependent unit.

When comparing the two groups we found that the average age of patients who were successfully weaned was 59 years as compared to 66 years of those patients who remained ventilator dependent. The previous length of stay (LOS) in the acute care hospital for patients who were weaned was 58 days compared to 93 for those not weaned. Additionally patients who were successfully weaned had an average of two comorbid diseases (coronary artery disease, congestive heart failure, diabetes mellitus, chronic obstructive lung disease, renal failure) whereas those who failed weaning had three comorbid diseases. The length of stay in our unit for weaned patients was 49 days and for non-weaned patients was 42 days.

Discussion

Weaning a patient from mechanical ventilation is usually accomplished easily and predictably.[7] Unfortunately there are no reliable predictors of weaning success from prolonged mechanical ventilation. A scoring system to predict weaning success using $P\underline{a}o_2$, $\underline{B}$UN, and $\underline{G}$ender (ABG) had a 70% accuracy rate for predicting success in patients requiring prolonged mechanical ventilation. Morganroth et al found that the patient's overall level of illness was an important determinant of weaning from mechanical ventilation.[8,9] For patients who fail multiple attempts at weaning and whose medical condition stabilizes, transfer to specialized weaning units is a practical option. Medical, psychosocial, and environmental factors contribute to a patient's weaning success.[10,11] A thorough discussion of all of these is beyond the scope of this report, however, certain psychological and environmental issues will be elaborated here.[10,11] Psychologic disturbances have frequently been reported in critically ill patients in the ICU and have been shown to have an adverse affect. The incidence and types of psychological disturbances that arise in the ICU have been well described.[12] The etiology of these disturbances are many but are often associated with the severity of illness, medication use, and preexisting psychological status.[11] The environment of the ICU (alarms, frequent awakenings for assessment, etc.) contributes to the sensory and sleep deprivation that often occur. Many feel that sleep deprivation is the major factor in the delirium that is often seen in the ICU. Furthermore, ventilator-dependent patients have the additional burden of impaired communication ability that can contribute to their anxiety. Specialized weaning units attempt to address these issues as well as provide multidisciplinary 'whole-being' rehabilitation.[13]

Weaning units like ours at the Hospital for Special Care provide individual rooms to help reduce noise. We attempt to minimize nocturnal interventions and provide an appropriate level of anxiolysis to help restore the patient's sleep cycle. Every attempt is made to facilitate patient communication by providing communication boards and talking tracheostomy tubes whenever appropriate. Additionally, a communication-disorder specialist is part of our multidisciplinary team and helps facilitate the patient's communication efforts. A psychologist is also a member of our team and provides counsel and relaxation techniques to assist patients in the management of their anxiety. Ambulation is encouraged and all patients are evaluated by a physiatrist on admission. An appropriate rehabilitation strategy is determined and carried out by physical and occupational therapists. A nutritional evaluation is completed upon admission. Further, the nurses and respiratory therapists provide most of the daily care and serve as the primary educators and motivators to patients and their families.

The success of a regional weaning center in liberating patients from mechanical ventilation has been well documented.[2,4,6] Isaacs et al reported the effects of a comprehensive multidisciplinary rehabilitation program in a ventilator rehabilitation unit on cognitive function and effective disorders.[14] Their data were based on the perception of 25 patients and their families, who contrasted their ventilator rehabilitation unit stay with their ICU stay. They found that patients and families reported an overall reduction in affective problems and cognitive impairment and an increase in encouragement and successful weaning during their ventilator rehabilitation unit stay.

The cost of maintaining patients on mechanical ventilation is a concern for everyone involved in health-care planning and delivery. In 1988 the Health Care Financing Administration established four chronic ventilator-dependent unit demonstration sites in the United States. The results from two of these units, as well as data from Scheinhorn et al, verify the clinical success of these units and the considerable cost savings compared to a prolonged stay in the ICU.[2,4,5]

Conclusion

Sixty-five percent of the patients admitted to our new regional weaning center after more than 21 days on mechanical ventilatory support were successfully liberated from mechanical ventilation. Younger, healthier patients who spent less time in an acute-care hospital were more likely to be liberated. The success of a regional weaning center as well as the reduction of the cost of caring for patients on prolonged mechanical ventilation provides support for their continued use.

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Counseling for Physical Activity: What Primary-care Physicians Should Know

DAVID N. CAMAIONE, PH.D. KARYL J. BURNS, PH.D.,
AND CHARLES T. CHATTERTON, M.S.

ABSTRACT—In Connecticut, 22.1% of the adult population report no physical activity other than activities of daily living. Primary care physicians can play a vital role in the fight against a sedentary lifestyle. As outlined in Healthy People 2000 and the Surgeon General's Report on Physical Activity and Health, the primary-care physician's role in the assessment and advising of physical activity is critical. The primary-care physicians that responded to the Connecticut survey appear to be doing an excellent job in delivering this important message. Recommendations made by the primary-care physician can be a great source of motivation for the patient. The primary-care physician's initial goal should be to get the patient active on a daily basis and than progress to more health-based fitness goals. The patient needs to receive instruction on goal setting, safe exercise tips, and adherence strategies. The primary-care physician's low-cost intervention of advising physical activity can help prevent medical problems in the future.

The most current recommendation on physical activity states that, "All U.S. adults should accumulate 30 minutes or more of continuous or intermittent amounts of moderate-intensity physical activity on most, preferably all, days of the week."[9] This latest recommendation offers primary-care physicians a broader range of activities to suggest to their patients. An overwhelming number of research studies indicate that physical activity is a powerful weapon in combating a host of lifestyle-related health problems.

Introduction

As the new millennium approaches, the effects of physical activity and its positive relationship with health continue to be strengthened and reaffirmed. The beneficial role of physical activity in the promotion of good health, disease prevention, and decreased mortality rates is clearly supported by current literature.[1,2] Higher levels of physical fitness and activity are associated with decreased death rates from all causes.[3-5] Even physical activity of a moderate intensity is related to lower mortality.[2] Among individuals with similar risk profiles, research indicates that those who are moderately or highly fit have lower death rates than less fit individuals.[6] Additionally, by promoting a sense of well-being and improved functioning, physical activity seems to enhance quality of life. Symptoms of depression and anxiety appear to be alleviated with physical activity.[2]

Physical Inactivity and National Goals

In spite of the research demonstrating the value of physical activity, 250,000 deaths occur annually related to physical inactivity (23.3% of total deaths), which ranks it as a major risk factor along with smoking (32.8%), hypertension (20.5%), and high serum cholesterol levels (23.0%).[7] A combination of poor dietary patterns and a sedentary life contribute to 300,000 deaths annually.[8]

To emphasize national health and disease prevention goals, the United States Department of Health and Human Services, Office of Public Health Service, developed a

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comprehensive document entitled, Healthy People 2000.[1] This report establishes a blueprint for health promotion and disease prevention for all Americans. The report consists of 22 priority areas, eight of which are assigned to health promotion. The first priority area for health promotion directs attention to physical activity and health. Primary care physicians (family practitioners, internists, and obstetricians/gynecologists) (PCPs) are asked to place greater emphasis on the physical activity levels of their patients. One specific objective (objective number 12) is to increase to 50% the PCPs who routinely assess and counsel patients about physical activity as a means of health promotion.[1]

A Connecticut Survey

From 1995 to 1996, a team of researchers at the University of Connecticut at Storrs conducted a study of PCPs in Connecticut to determine if these practitioners were meeting the Healthy People 2000 objective by routinely assessing and counseling patients about physical activity. Five hundred eighty-one questionnaires were mailed with a return rate of 20% (118 respondents). Although this low response rate does not permit generalization to all PCPs in Connecticut, the data serve as an excellent starting point for a discussion of physical activity. The findings of this study are listed in Table 1.

Even though generalizations cannot be made from these limited data, the researchers concluded that at least those PCPs who responded to the survey were providing excellent advice about physical activity. Unfortunately, it is not known if the nonrespondents are discussing physical activity with their patients. Perhaps, those who failed to respond do not consider physical activity a high priority or did not take the time to complete the questionnaire. A discussion of current physical activity guidelines and methods that PCPs can use to promote physical activity to patients is warranted. The issue of physical inactivity is too significant to ignore.

A New Recommendation for Physical Activity

A new recommendation regarding physical activity was recently issued by the American College of Sports Medicine and the Centers for Disease Control and Prevention and supported by the recent Surgeon General's Report on Physical Activity and Health.[2,9] The recommendation states that, "Every U.S. adult should accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week."[9] Compared to previous guidelines, the new recommendation for physical activity provides encouraging advice, especially for the most sedentary who may be overwhelmed at the suggestion of vigorous exercise.[10]

Earlier guidelines advised vigorous exercise such as jogging, cycling, or swimming performed as part of a structured routine of at least 20 minutes a day on at least three nonconsecutive days. The goal was to achieve a target heart rate of 60% to 90% maximum to improve fitness.[9] This approach to the exercise prescription became widely accepted and favored a dichotomous view of the effect of exercise.[11] Both health professionals and the public came to believe that unless one achieved the prescribed intensity, duration, and frequency of large muscle exercise, physical activity conferred little health benefit. However, it is now recognized that the quantity and quality of physical activity needed to achieve health benefit is different from that required to achieve fitness.[2] Unfortunately, the previous recommendation may have discouraged people from adopting exercise or engaging in more frequent physical activity. Indeed, some physicians may not have advised physical activity if it seemed that the patient was incapable of vigorous exercise and adherence to a strict schedule.[10]

The new recommendation highlights three important changes from previous guidelines.[2] First, moderate-intensity physical activity of three to six METS (one MET is equal to the resting metabolic rate of 3.5 mL of oxygen consumed per kilogram of body weight per minute) pro-

Table 1.—Connecticut Survey of Primary Care Physicians

Exercise Recommendations:	**Assessment Method:**	**Counseling Method:**
1. 92% advise exercise 3x/week	1. 73% always or frequently assess the physical activity status of their patients	1. 99% use discussion
2. 86% recommend the duration of exercise no less than 21–30 minutes	2. 100% ask their patients directly about physical activity	2. 33% use written materials
3. 100% advise some form of aerobic activity	3. 95% measure height and weight	3. 22% refer patients to exercise specialists

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Table 2.—ACSM's Recommendations for Exercise Testing Prior to Moderate or Vigorous Exercise

Intensity	**Individuals for whom test is recommended**
Moderate	High risk with symptoms and those with known disease
Vigorous	Older healthy; all high risk; and those with known disease

Moderate = 40–60 % $Vo_{2max.}$ Vigorous = > 60% Vo_{2max} High risk = two or more coronary risk factors or one or more signs or symptoms of cardiopulmonary or metabolic disease.

Adapted from ACSM's Guidelines for Exercise Testing and Prescription, 5th ed., Williams & Wilkens, 1995, p.25.

vides health benefit.[9] A brisk walk of three to four miles per hour is an example of moderate-intensity physical activity. Second, episodes of physical activity of eight to 10 minutes that add up to 30 minutes a day are beneficial. Finally, if one elects to engage in moderate physical activity, the frequency should be extended from three days per week to five to seven days per week.

A Role for Primary-care Physicians

PCPs have an ideal opportunity to 1) spread the message that intermittent, moderate physical activity can lead to better health and 2) help patients become physically active or increase their less-than-adequate activity levels. To determine if patients are meeting the new recommendation, assessment will require review of daily activities and an estimation of how much total time is spent in at least moderate physical activity.[9]

A variety of physical activities, including household, occupational, and leisure activities, can contribute to fulfillment of the current recommendation. Some typical recreational activities that can produce a moderate level of energy expenditure include outdoor bicycling or indoor cycling, swimming, calisthenics, weight lifting, dancing, playing golf without using a cart, and even fishing while standing.[2,12] Some common daily activities that would be at a moderate level include walking upstairs, gardening, raking leaves, lawn mowing, painting, wallpapering, refinishing furniture, doing housework, and playing actively with children.[2,12] Most occupations that involve walking, standing, lifting, and arm movement are of moderate intensity.[13] Individual effort and circumstances can alter energy expenditure for each individual. However, if these activities are performed at least at a moderate intensity for either 30 continuous or intermittent minutes, the patient meets the physical activity recommendation. Patients who perform physical activity of a greater intensity or duration would learn that activity beyond the recommended level provides additional benefit.[2,9] Patients who do not engage in at least moderate physical activity for 30 minutes on most days should be advised to become more physically active. Performing enjoyable and convenient activities that are easy to accomplish as part of the patient's daily routine is recommended. Sedentary patients should start by adding a few minutes of increased activity into their day and gradually increasing the time spent being physically active.[9]

Whereas safety is always a concern, the American College of Sports Medicine (ACSM) concludes that "virtually all sedentary individuals can begin a moderate exercise program safely."[13] If the energy requirement of the desired activity is uncertain, "moderate" can be considered as an intensity that the patient is currently capable

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Table 3.—Guidelines for Prescribing and Promoting Physical Activity

Explore with patient all opportunities to be physically active.
Determine activities that patient enjoys and would be willing to build into the daily routine.[15]
Assess readiness and if necessary, prescribe small doses and increase gradually to desired level.[19]
Provide a written prescription for type, duration, and frequency of physical activity tailored to the patient's situation.[17,18]
Encourage patient to recruit support or participation of family and/or friends.[14]
Encourage patient to monitor and reward self.[16]
Point out ways patient can maintain activity when there are competing demands or patient is away from home.[20]
Rehearse with patient behaviors to cope with deterring situations.[20]

Adapted from Physical Activity and Health, a Report of the Surgeon General.
United States Department of Health and Human Services. 1996, p.46.

of doing. This means that the activity can be performed comfortably for approximately 60 minutes.[13] For those patients desiring to begin a vigorous (> 60% maximum oxygen consumption) exercise program, the guidelines for exercise testing and prescription as outlined by the ACSM should be followed.[13] Table 2 outlines guidelines for exercise testing of individuals who wish to become more physically active or engage in regular exercise. Individuals at an increased risk or who have a known disease should also have an exercise test. Increased risk is defined by ACSM as possessing two or more risk factors for coronary artery disease or having one or more signs or symptoms suggestive of cardiopulmonary disease. Age greater than 45 for men and 55 for women (or premature menopause without hormone replacement therapy) is considered a risk factor. Finally, an individual with cardiac symptoms should be evaluated with an exercise test.

Strategies to Promote Physical Activity

A number of attitudinal and behavioral factors have been identified that influence the initiation and maintenance of a physical activity routine. Social history, cultural influences, physical disability, and health status play a role in motivation to begin an activity habit.[2] Table 3[14-20] lists some general guidelines that may be used when prescribing physical activity.

Several groups are known to be at risk for sedentary living; physicians will be challenged to increase the activity levels of these individuals. These include women, African Americans, those with lower income, the less educated, and the elderly.[21] Older persons may be encouraged to learn that health benefit can be achieved from physical activity regardless of age.[22] Until research can find more ways to increase physical activity in these risk groups, a reasonable approach is to focus extra attention on the strategies (see Table 3) associated with increased likelihood of activity participation.[10,14-16]

The recommendation issued by the Centers for Disease Control and Prevention and the American College of Sport Medicine should be received enthusiastically by PCPs. The new, more proactive recommendation should make it easier for physicians to attract patients to regular physical activity.[10] The recommendation intends to supplement previous guidelines. Those who prefer vigorous exercise for at least 20 minutes, three days per week, should continue with their routine. However, the latest recommendation offers a broader range of activities and durations considered adequate to improve health. For individuals not up to the rigor of regular vigorous exercise, increasing regular moderate physical activity, even in short episodes can benefit health. Because moderate physical activity includes intermittent household, occupational, and child care activities, those with busy schedules and limited access to exercise facilities can still meet the new recommendation. Expensive home equipment or a trip to an exercise facility is no longer needed to meet the current physical activity recommendation. Similarly, an extended block of time is not necessary. All that is required, is a commitment to incorporate a total of 30 minutes of moderate intensity activity into the daily routine.

In Connecticut, 22% of the adult population report no regular extra physical activity. This represents a large number of individuals who are at risk for coronary heart disease, colon cancer, diabetes, obesity, hypertension, osteoporosis, and muscular disability.[2] If the Healthy People 2000 objectives are achieved, mortality rates for coronary heart disease, colon cancer, and diabetes are estimated to decrease by 5.6%, 4.6%, and 4.3%, respectively.[23]

Physical activity is a simple, low-cost intervention that can reduce disease and disability. By counseling individual patients and acting as community leaders to promote physical activity, PCPs have an opportunity to promote a few simple changes that will enhance the health of Connecticut's citizens.

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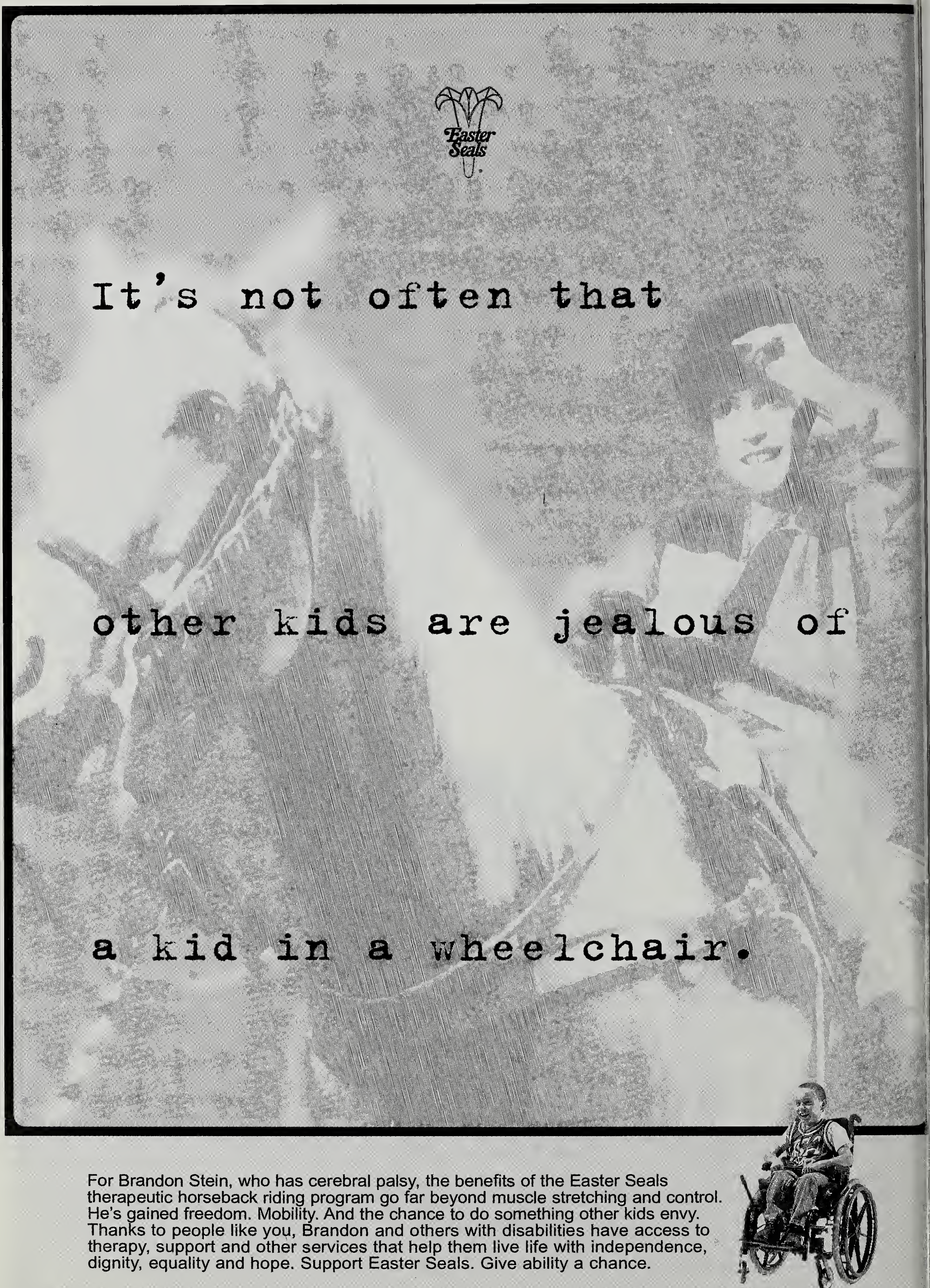
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Abstracts of Papers: Danbury Hospital 12th Annual Joseph L. Belsky, M.D., Research Day
14 May 1997

Forty abstracts were submitted and 13 were selected for publication in *Connecticut Medicine.* On this 12th anniversary it is notable that participation by community physicians and reports of outcomes investigations has continued to increase.

Correlation Between Left Ventricular Ejection Fraction Obtained Using Gated SPECT and Echocardiography

MASOOD AHMAD, M.D., JONATHAN ALEXANDER, M.D., WILLIAM JOHNS, M.D., SHIV GUPTA, M.D., AND THOMAS HALPIN
Departments of Pathology and Laboratory Medicine (Nuclear Medicine)
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Measurement of the left ventricular ejection fraction (LVEF) is useful in evaluating patients with coronary disease and cardiomyopathy. With recent advancements in computer technology and radiopharmaceuticals, we are now able to measure the LVEF by radionuclide gated tomography when a patient is undergoing a myocardial perfusion scan with Technetium99m SESTAMIBI. Other methods available include: echocardiography, contrast ventriculography, multiple uptake gated acquisition blood pool imaging (MUGA), and first pass nuclear dynamic imaging.

The records of 29 patients who underwent gated single photon emission computed tomography (SPECT) and echocardiography (ECHO) imaging at Danbury Hospital between September 1996 and February 1997 were reviewed. The left ventricular function on ECHO reports were converted to LVEF values (normal = 60%+, low-normal = 50% to 55%, mildly reduced = 40% to 50%, moderately reduced = 30% to 40%, and severely reduced = <30%). The LVEF values from gated SPECT studies were assigned to similar groups and were compared with the ECHO results. Some patients had also undergone contrast ventriculography and MUGA scans.

Analysis of data showed a correlation coefficient of 0.91 between the LVEF obtained with gated SPECT and ECHO techniques. Several patients with discrepant values were excluded from the study if either cardiac events and/or revascularization occur during the interval between the two studies.

Gated SPECT is a new method of determining LVEF with results comparable to ECHO and MUGA. Using this method we are able to evaluate myocardial perfusion, wall motion, and quantitative ventricular function with one study. The quantitative results are comparable to those obtained with ECHO. We now routinely perform gated studies on most patients undergoing perfusion imaging.

Clinical professor (Dr. Gupta), assistant clinical professor (Dr. Johns), University of Connecticut School of Medicine; Clinical professor (Dr. Alexander), Yale University School of Medicine.

Evaluation of Esophageal Biopsies "Below Z Line" for Specialized Intestinal Metaplasia: A Study of 78 Patients at Danbury Hospital

NADIA HABIB, M.D., Ph.D., DONALD GORDON, M.D., AND HANI EL-FANEK, M.D.
Departments of Pathology and Laboratory Medicine and Medicine (Gastroenterology)

Esophageal biopsies for diagnosis of reflux esophagitis (RE) and Barrett's esophagitis (BE), the latter characterized histologically by the presence of specialized intestinal metaplasia, are routinely taken 3 cm above the lower esophageal sphincter region. However, there is an unproven belief that markers for these conditions are more likely to be found within 1 cm of the gastroesophageal junction. Occasionally, it is impossible to define exactly where the lower esophageal sphincter zone is located. No one to date has studied the histopathologic changes consistent with RE and BE in specimens taken from below the lower esophageal sphincter, ie, "Below Z line," and correlated them with patient symptomatology.

We studied archived sections from "Below Z line" biopsies submitted to Danbury Hospital in 1996 (78 patients). All patients were adults ranging in age from 17 to 87-year-old (mean 53), 49 were females.

Results: In our study, 15 and 10 cases showed microscopic changes of RE and BE, respectively, in "Below Z line" biopsies. Of these two groups, two patients showed changes of both RE and BE. None of the examined biopsies showed dysplasia or evidence of malignancy. Therefore, 19.2, 12.8, and 2.6% of the submitted "Below Z line" biopsies had microscopic changes of RE, BE, and the latter two combined, respectively.

It seems that the sensitivity of detection of changes of RE and BE would be increased by sampling esophageal mucosa from "Below Z line." In addition, follow-up of patients with microscopic changes of RE and BE in "Below Z line" specimens for dysplasia and/or malignancy, is recommended and will be undertaken in a prospective study.

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Oral Anticoagulation and Bleeding Complications: An Observation

LEONEL EDWARDS, M.D., PATRICIAN PALMER, AND RAMON KRANWINKEL, M.D.
Department of Pathology and Laboratory Medicine

Warfarin is the drug of choice for long-term anticoagulation and as such is prescribed annualy to more than one million patients in the United States. The most significant complication is bleeding. Bleeding events may be subclassified into minor, serious, and life-threatening according to medical consequences and associated costs. The treatment of choice for serious or life-threatening bleeding complications is fresh frozen plasma. Recent articles have addressed issues relating to polypharmacy, altered metabolism, and chronic diseases as factors that can predispose to a bleeding event.

We reviewed orders for fresh frozen plasma requested from January 1996 to December 1996 to identify and characterize patients on an anticoagulant with serious and life-threatening bleeding complications. Thirty patients fitting these criteria were identified. To characterized these patients, we reviewed their charts noting reason for anticoagulation, age of the patient, comorbidity, site of bleeding, international normalized ratio (INR) values and concurrent medication. Most of the patients were between 70 to 79 years of age (37%) with an age range of 37 to 94 years. Most frequent reasons for anticoagulation were: atrial fibrillation (57%) and deep venous thrombosis (17%). Other reasons for anticoagulation (26%) in the study group were: hypercoagulable state—not specified, mitral valve replacement, ventricular thrombus, transient ischemic attacks, cerebrovascular accidents, and hip replacement surgery. The most common site of bleeding at presentation was gastrointestinal (66%), while central nervous system bleeding occurred in 23% of the cases. At the time of presentation 80% showed an INR value, >3 while the remaining 20% ranged from 1.86 to 3. In 43% of the cases the INR was >10. Interestingly, an underlying predisposing condition for thrombosis was found in 77% of the cases. Diabetes mellitus and malignancy were the most frequent. Known prescriptions that can interact with warfarin were noted in 90% of the cases. These include: Lasix® (27%), acetaminophen (17%) aspirin (17%) prednisone (13%) and Atenolol® (13%). In 60% of the cases two or more of these medications had been used.

The recommended dosage of fresh frozen plasma for the treatment of bleeding complications is 4 to 6 units for an average (70kg) adult. In our study group this dosage was followed in 23% of the cases. Fifty-seven percent received only two units of fresh frozen plasma and the utilization ranged from one to 10 units per patient. The average number of units used in the treatment of gastrointestinal bleeding episodes was 2.5, while the average used in the treatment of central nervous system bleeding was four. The number of units used did not correlate with the INR value at presentation. There were six fatalities in the study population, four in the patient group with central nervous sytem bleeding and one in the group with gastrointestinal bleed. The remaining fatal outcome was due to a ruptured aortic aneurysm.

Our data shows that bleeding complications are most often seen in three instances: in the presence of medication interaction, diabetes mellitus and malignancy. We also report a low compliance with fresh frozen plasma usage in treatment of bleeding complications.

Assistant clinical professor of pathology (Dr. Kranwinkel), Yale University School of Medicine.

Childhood Immunization and Parental Knowledge and Attitude

JACK S. C. FONG, M.D. AND ELIZABETH V. ROBILOTTI
Department of Pediatrics

The goal of the Healthy People 2000 Initiative is to achieve an immunization completion rate at more than 90% for children at two years of age. An understanding of parental perspectives may help providers to focus on parental needs and ultimately to implement programs that will improve the immunization completion rate.

A questionnaire was developed to obtain the intended information from parents who brought their children to the Pediatric Health Center during the summer months of 1996. A total of 103 parents with children between the ages of two to five years was recruited for the study. Medical records of children were reviewed so as to classify the parents into one of the two groups: those whose children were delayed in their immunization and those whose children were in compliance with the recommended immunization schedule.

Of the 103 subjects, 85 (83%) were in the timely group and 18 (17%) were in the delayed group. To the question "Is your child up to date with his/her recommended immunizations?," 77 (91%) of the on-time parents group gave the correct answer while only one (6%) of the delayed parents group were correct with the answer. Comparison of the responses of the two groups with the Fisher's Exact Test gave a one-sided *P* value of <.0001. Parents of both groups had similar knowledge on various aspects of childhood immunization. Indeed, on- time parents responded that they knew less regarding vaccine preventable infections than delayed parents (*P*<.009). Although mild childhood illnesses are not contraindications to immunizations, delayed parents, compared to on-time parents, were more likely to cancel an appointment for immunization if their children had mild illnesses (*P*<.03). With regard to their own wellness, only 8 (53%) of delayed parents, *vs* 61 (80%) of on-time parents, recognize that adults also need immunization (*P*<.04).

Our study documented significant differences in knowledge and attitude regarding childhood immunization by parents in the on-time *vs* delayed groups. Delayed childhood immunization may at least in part be related to the differences identified.

Clinical associate professor of pediatrics, Yale University School of Medicine and clinical assistant professor, Allegheny University of Health Sciences (Dr. Fong) and recipient of a summer student fellowship, Department of Education and Research, Danbury Hospital (Ms. Robilotti).

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Effectiveness of a Weight-based Heparin Nomogram in the Treatment of Venous Thromboembolism

BARARA LESPERANCE, M.S.N., LEONEL EDWARDS, M.D., ARTHUR KOTCH, M.D.,
CARLOS FRAGOSO, M.D., AND ARTHUR GRUBER, B.S.
Departments of Medicine (Pulmonary Section) and Pathology/Laboratory Medicine

Venous thromboembolism (VTE) continues to be a leading cause of significant morbidity and mortality. Additionally, delayed therapeutic anticoagulation (>24h) increases the risk of recurrent VTE 15 fold (Hull et al, *N Eng J Med* 1986; 315:1109-14). The need for rapid anticoagulation is well recognized and accepted as standard practice, but achieving therapeutic anticoagulation prior to 1994 was inconsistent in our institution.

Audits of heparin therapy in early 1994 revealed that fewer than 50% of patients achieved therapeutic APTTs within 48 hours of initial dosing. Bolus doses averaged 5000U regardless of weight, and drips were initiated at 1000 U/hr. Drip adjustments were physician-driven and varied widely.

A preprinted standard order sheet for the treatment of VTE using a weight-based bolus and standard nomogram for the immediate adjustment of the drip based on APTT values was adopted: The standard rate for the drip was 1,320 U/hr. This order sheet with guidelines was implemented in May 1994.

Within six months of initiating the preprinted order sheet, therapeutic APTTs were achieved in less than 24 h in 60% of the patients. Three months later, Coumadin® administration on day one of heparin therapy was added. Within two years, 95% to 100% of patients with VTE are placed on the standard orders and 91% to 100% of the patients reach therapeutic anticoagulation within the first 24 hours.

Conclusion: Adoption of a preprinted order sheet using a weight-based bolus and nomogram achieves therapeutic levels of anticoagulation within 24 hours with no increase of bleeding complications.

Associate clinical professor of medicine (Dr. Kotch), assistant clinical professor of medicine (Dr. Fragoso), Yale University School of Medicine.

Prevalence of Asthma Among Selected Students at Western Connecticut State University: Analysis of the Value of an Asthma Screening Program

MARJORIE SHAFTO, M.D., GEORGETTE ASHE-KINNEY, M.S., AND JACK S. C. FONG, M.D.
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Significant progress has been made in the management of asthmatic patients to maintain a normal lifestyle including participation in sports competition.

Recent studies suggest that the clinical condition of asthma is grossly underdiagnosed. We conducted a bronchial hyperresponsiveness screening study on Western Connecticut State University physical education students to judge the prevalence of asthma.

Out of a total of 245 students enrolled, 226 participated in the study. Baseline pulse rates, pulse oximetry readings, and peak expiratory flow rates (PEFR) were determined prior to each student participating for five minutes at a maximum running/step-up exercise so that each test subject's heart rate was maintained at 80% maximum. A rest period of five minutes followed. Pulse rates, pulse oximetry readings, and peak expiratory flow rates were again determined.

Within the population of enrollees, seven students reported the diagnosis of asthma. Three of the seven asthmatics chose not to participate. Twelve students, without any known history of asthma, had post-exercise reduction PEFR of 1 5% or greater as compared to pre-exercise value. Such a finding is compatible with the diagnosis of asthma or bronchial hyperresponsiveness. Of the total population of 245 students, the prevalence of asthma in this study is 7.7% or 19 students. If the cut-off point is set at >10% reduction between pre- and post-exercise PEFR, the number of students identified rises to 37 (15.1% of 245 students). Pre- and post-exercise pulse oximetry readings did not differentiate students with or without bronchial hyperresponsiveness. Clinical inquiries in a questionnaire did not reveal any significant respiratory tract symptoms or positive family history among students with, compared to those without, more than a 15% deficits in post-exercise PFR.

Pre- and post-exercise PEFR may help to identify patients with asymptomatic asthma and contribute valuable information in counseling sports participation.

Director, Student Health Services, Western Connecticut State University (Dr. Shafto), associate professor of physical education, Western Connecticut State University (Professor Ashe-Kinney) and clinical associate professor of pediatrics, Yale University School of Medicine and clinical assistant professor, Allegheny University of Health Sciences (Dr. Fong).

Childhood Immunization and Primary-care Services

JACK S. C. FONG, M.D. AND FAISAL HUSSAIN, B.S.
Department of Pediatrics

Appropriate use of primary-care services is paramount in the delivery of cost-effective health-care services, including the goal of childhood immunization as established by the Healthy People 2000 Initiative. We reported earlier that inappropriate use of primary-care services is associated with delays in childhood immunization.

We reviewed the entire patient data base of 3,689 charts at the Pediatric Health Center (PHC) and identified 227 patients who were between the ages of two and three on 1 September 1996. These children also had all their immunizations at the PHC. Their charts were reviewed and additional information was also obtained through the medical records data bank.

For the first set of immunization vaccines, 188 children were on time and 39 were late. By the age of two, 21 of the 188 children of the first group were late for the completion of the primary series of immunization, whereas 11 of second group were late ($P<.01$). When the grouping is changed to Women, Infants, and Children (WIC) program enrollment, 182 had WIC and 45 did not. Children in the WIC program had a higher percentage of immunization completion ($P<.04$). Reviewing the number of well-child visits, children who were on time for their immunization had an average of 7.2 visits in two years. In contrast, children who were late for their immunization had only 5.1 visits. To comply with the recommended schedule of childhood immunization, six well child visits before age two are necessary. As a possible reflection of inappropriate use of primary-care services, the number of walk-in visits was compared to scheduled appointment visits. The ratios of these types of visits were smaller from the group of children who were on time for immunization than those from the group who were late for their immunization ($P<.011$). Other primary care services, lead screen, TB testing, and blood hemoglobin levels, were reviewed. On-time assessment of these three parameters was at 32% for the immunization on-time children, while it was at 17.3% for children with delayed immunization.

Our data confirm that childhood immunization is closely related to other health-care status. Identification of these factors may help to give early warning to those who may more likely fall behind in the recommended immunization schedule, in wellness prevention practices, and in accessing more primary-care visits.

Clinical associate professor of pediatrics, Yale University School of Medicine and clinical assistant professor, Allegheny University of Health Sciences (Dr. Fong) and recipient of a summer student fellowship, Department of Education and Research, Danbury Hospital (Mr. Hussain).

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Three-year Experience with an Indeterminant Classification of Thyroid Aspiration Cytology and Correlation with Surgery

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Departments of Medicine and Pathology/Laboratory Medicine

We previously reported two sequential five-year experiences with thyroid needle aspiration cytology correlated with surgical confirmation. In the period 1991-95, 81% of cytologic classes III (suspicious of cancer) and IV (cancer) were proved to have a thyroid malignancy compared with 3.9% diagnosed preoperatively as negative (Class I) or atypical (Class II).

A diagnostic class, Class IIF, has been identified in 5% to 8.5% of patients each year, to deal with highly atypical cytologies. They were subdivided into Class II FS (would like to see more material) and Class II FM (malignancy cannot be ruled out) that warranted continued evaluations.

The present study was undertaken to review our experience with Class IIF with respect to surgical outcome.

During the three year period 1994-96 there were 31 patients with thyroid cytology Class IIF reported, eight were males, 23 were females. The ages ranged from 21 to 78-years old; 21 (70%) were under age 50. The table below shows findings in the 17 patients (56.7% of the total) who underwent surgery of the thyroid.

These results indicate that an indeterminant classification such as IIF cannot be assumed to be reassurance that malignancy is probably not present. Indeed, the positive predictive rate of 35.3% (and coincidentally the sensitivity of 35.3%) should give the clinician sufficient guidance to offer surgery as a prime option *vs* more conservative management such as hormone suppression and additional diagnostic aspirations.

			Surgical Findings—No. (%)			
Patients	**Number of Cases**	**Operated No. (%)**	**Cancer**	**Adenoma**	**Nodular Goiter**	**Thyroiditis**
Males	8 (26.7)	6 (75)	2 (33.3)	1 (5.9)	1 (5.8)	2 (11.8)
Females	23 (73.3)	11 (50)	4 (36.4)	4 (23.5)	2 (11.8)	1 (5.8)
Totals	31 (100)	17 (56.7)	6 (35.3)	5 (29.4)	3 (17.6)	3 (17.6)

Clinical professor of medicine (Dr. Belsky), Yale University School of Medicine, clinical professor of pathology (Dr. Braza), New York Medical College.

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Endocervical Curettage as a Predictor of Endocervical Dysplasia

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AND FRANK BRAZA, M.D.
Departments of OB/GYN and Pathology/Laboratory Medicine

The purpose of this study is to determine the negative predictive value of the endocervical curettings (ECC) at the time of colposcopy, and assist in the establishment of a practice guideline for diagnosis and treatment of cervical intraepithelial neoplasia (CIN).

The loop electrocautery excision procedure (LEEP) is a frequently used outpatient modality to diagnose and treat cervical intraepithelial neoplasia, a precancerous lesion of the cervix. LEEP involves the removal of a portion of ectocervix using electrocautery after application of Lugol's solution which dermarcates the area(s) of abnormality, and is performed after local anesthesia. A single pass is performed and a flat disc of cervical tissue encompassing the transformation zone is removed and submitted for microscopic evaluation. If the curettings are positive for dysplastic cells, a cold knife cone biopsy is generally recommended in order to evaluate clearly the extent of endocervical involvement by dysplasia; clean, unfulgurated surgical margins of the endo- and ectocervix will allow the most accurate assessment of residual disease and determine the necessary treatment (s) required. If the ECC is negative, the practitioner will often opt for LEEP, given its relative ease.

We reviewed the pathologic reports of 116 patients who underwent LEEP with or without a button for CIN from January 1996 to January 1997. Fifty-seven patients had LEEP with button (LEEP+B) and 59 had LEEP alone. Twenty-three patients had an ECC at the time of LEEP. We examined the subset of patients who had LEEP+B and reviewed their ECC results at the time of colposcopy done prior to LEEP. ECC results for 10 patients were not available. Four (7%) of the patients had a positive ECC at the time of colposcopy and still underwent a LEEP+B. Forty-three patients (75%) had a negative ECC at the time of colposcopy. Four of these 43 patients had a button with positive endocervical margins at the time of LEEP indicating residual disease and suboptimal treatment. The negative predictive value of the ECC at the time of colposcopy was calculated to be 91%.

LEEP has been shown to be a useful modality to diagnose and simultaneously to treat cervical intraepithelial neoplasia. Based on our results, the negative predictive value of the ECC at the time of colposcopy is high, and therefore, the likelihood of residual endocervical disease is low, approximately 9%. These results can be used by the practitioner to tailor treatment of cervical dysplasia with LEEP, and suggest that a button need not always be done. However, treatment will need to take into account each patient's particular requirements based on her history, parity, and reproductive concerns.

Associate clinical professor of obstetrics and gynecology (Dr. Silberman), Yale University School of Medicine and University of Connecticut School of Medicine; clinical professor (Dr. Braza), New York Medical College.

Stem Cell Transplantation: The Danbury Hospital Experience

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Clinical use of chemotherapy and cytokine-mobilized peripheral blood progenitor cells (also known as PBPCs or blood stem cells) has proved effective to reconstitute multilineage blood production following very high-dose chemotherapy. The ease with which PBPCs can be collected and their reproducible clinical effectiveness to support patients through intensive treatment protocols, have led to a virtual elimination of bone marrow as the source of cellular support for myeloablative chemotherapy in many transplant centers.

Since the beginning of the stem cell program at Danbury Hospital in August 1995, approximately 13 patients have been treated with this therapeutic modality. The diagnoses pretransplantation included breast carcinoma (39%), non-Hodgkin's lymphoma (39%), Hodgkin's lymphoma (8%), multiple myeloma (8%) and ovarian carcinoma (8%). A total of 30 bags containing the progenitors cells at a concentration of at least $2.5\ 10^6$/kg were used. The utilization per patient ranged from 1 to 5 units with a median of 2.3. They were also supported with packed red blood cells (PRBCs) and platelets transfusion. The average number of units of RBCs used after transplantation was two, range none to 7 units. The average units of platelets required after transplantation was two, range 1 to 5 units per patient.

Nine (69%) of the patients are alive, without evidence of recurrent disease, while recurrent disease was found in two (15%). Two fatal outcomes have occurred.

Assistant clinical professor of medicine (Or. Pezzimenti), Yale University School of Medicine

UNIVERSITY OF MARYLAND, BAL

Co-expression of Cytokeratins 7 and 20 as a Valuable Marker in the Classification of Epithelial Malignancies

HIMANSHU GUNDERIA, M.D., BEATRIZ CUELLO, M.D., Marcela Bertola Rumeli, B.S.
Department of Pathology and Laboratory Medicine

Metastatic carcinoma of unknown origin accounts for 5-10 % of all reported cancers, and represents a diagnostic challenge for the clinician and the surgical pathologist. The optimal management of these patients requires the identification of treatable subsets within the group. Cytokeratins (CK), the intermediate filament protein found in epithelium and epithelial tumors are distributed in specific patterns in various organs. The co-expression of two newly described members of the cytokeratin family, cytokeratin 7 and 20, has been tested as a diagnostic marker in the determination of primary site of origin in a variety of epithelial tumors.

In our study, we randomly selected from our files 114 cases of carcinomas of known but varied primary sites, including colon, stomach, lung, breast, urinary bladder, prostate, and bile duct. These tumors were evaluated using commercially available monoclonal antibodies to Cytokeratins 7 and 20 and an avidin-biotin immunoperoxidase technique.

Co-expression of both antibodies was found in all gastric adenocarcinomas, in the majority of urinary bladder carcinomas, and in one half of the prostate and biliary duct adenocarcinomas.

The immunophenotype of CK7 positive/CK20 negative was seen in all adenosquamous pulmonary tumors, most lung and breast adenocarcinomas, and the remaining biliary duct tumors.

Immunophenotype CK7 negative/CK 20 positive was seen almost exclusively in the colonic adenocarcinomas. Both antibodies were negative in all pulmonary squamous carcinomas and one half of prostatic carcinomas. No other tumors exhibit this particular immunophenotype.

The conclusion of this study is in concordance with previously published articles, that in the appropriate clinical setting, the coordinate expression of CK7/CK20 is a valuable diagnostic tool in the determination of primary site of origin in selected tumors, particularly urinary bladder, colon, stomach, lung, and biliary tract.

Other tumors with a consistent immunohistochemical profile (not included in our study), are pancreatic carcinomas (CK7/CK20 positive) and hepatocellular and renal cell carcinomas (CK7/CK20 negative). In prostatic and breast carcinomas these markers are of less diagnostic value but alternative stains such as prostatic specific antigen and hormone receptors are extremely helpful.

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Screening for Antepartum Carriers of Group B Streptococcus: An Analysis of Two Methods

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Department of Obstetrics and Gynecology

Objective: to determine whether one perineal-rectal bacterial culture, obtained at a 32-week antepartum visit, would be superior to the two cervicovaginal cultures currently obtained on each patient in the screening for carriers of Group B streptococcus (GBS).

Methods: 44 patients at Danbury Hospital's Women's Health Center antepartum clinic were screened using a cervicovaginal culture at their first antepartum visit. When seen at the 32-week visit, in addition to the routine cervicovaginal culture, an additional swab was obtained from the perineal skin and the anorectal mucosa. The results of these cultures were compared.

Results: Nine of the 44 women were found to have a least one culture positive for GBS, for an overall incidence of GBS carriage of 20.5%. Eight of the nine carriers would have been identified if only the two cervicovaginal cultures were obtained, although only three ofthese women were GBS positive at the 32-week visit. Four of the nine carriers would have been identified if only the 32-week perineal-rectal culture was obtained. There were no instances in which the 32-week cervicovaginal and perineal-rectal cultures were positive in the same person.

Conclusion: Since GBS sepsis is a leading cause of neonatal morbidity and mortality, it is important to consider some method of screening for carriers of GBS. The method of obtaining two cervicovaginal cultures was found better to identify women as carriers of GBS than one perineal-rectal culture.

Associate clinical professor of obstetrics and gynecology (Drs. Foye and Silberman), Yale University School of Medicine and the University of Connecticut School of Medicine.

Computer-generated Telephone Reminder Calls: An Intervention to Improve Compliance with Appointment Keeping

JACK S. C. FONG, M.D., PATRICIA DELVECCHIO, JENNIFER DOUGLAS, B.S.
AND SUSAN DERENZO, B.A., M.P.H.
Department of Pediatrics and The Connecticut Healthcare Research
and Education Foundation, Inc.

Failure to keep scheduled appointments for medical services has long been recognized to delay and/or deprive patients themselves of professional services, to disrupt the operational processes in offices, and to contribute to rising health-care costs. Compliance with appointments is particularly important for achieving the childhood immunization goal. At the Pediatric Health Center (PHC), we studied the effectiveness of computer-generated telephone reminder calls as a way to reduce broken appointments.

During February 1997, PHC patients received computer-generated telephone reminder calls during the evenings prior to their scheduled appointments. Information from the computer program and the attendance record of patients were reviewed and analyzed. In addition, past PHC attendance records were also evaluated and analyzed. The PHC had 851 scheduled appointments. Following 76 cancellations, the PHC had a net scheduled number of 775. Only 489 (63% of 775) were eligible for the telephone reminder calls, because the other appointments were made after the reminder call data entry had been completed. For these 489 patients,' the computer program generated a total of 632 telephone calls and was successful with 364 (74.4% 0f 489) telephone pick-ups. For each phone pick-up, the computer generated 1.7 calls. The reminder calls at the PHC amount to a total telephone time of 164 + 28 minutes (1 SD) per office day.

Compliance rate with appointment keeping at the PHC in February 1997 was at 73.7% ± 6.2% (1 SD). This may be compared to 67.9% + 1.6% (1 SD) for the months of February from 1993 to 1996. The appointment keeping compliance rate for the years 1993 to 1996 was at 67.2% ± 2.6% (1 SD). If the analysis focuses only on those patients who received the reminder phone calls, the compliance rate with appointment keeping was at 85.5% ± 7.3% (1 SD). In a review of 164 reports referenced in MEDLINE, published between 1966 and 1990, the mean compliance rate with appointments for medical services is 58%.

The finding of this study confirms that effective intervention with computer-generated telephone reminder calls increases kept appointments. Data obtained also permit the projection and calculation of resource necessary for a manual telephone reminder system. Further refinement of the computerized system in the future is also expected to improve the outcome of the intervention.

Clinical associate professor of pediatrics. Yale University School of Medicine and clinical assistant professor, Allegheny University of Health Sciences (Dr. Fong), office manager, Pediatric Health Center (Ms. DelVecchio), child life specialist (Ms. Douglas) and staff assistant to the vice president, Research, The Connecticut Healthcare Research and Education Foundation, Inc. (Ms. DeRenzo).

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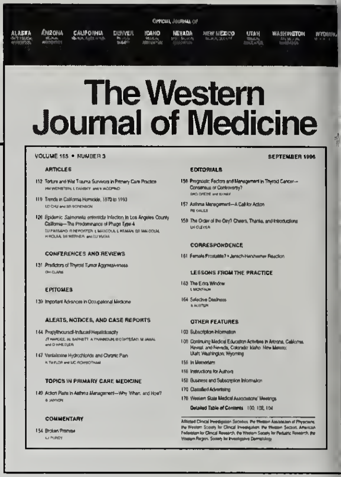
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EPITOMES OF PROGRESS

Important Advances in Clinical Medicine

Physical Medicine and Rehabilitation

Murray E. Brandstater, M.D., Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in physical medicine and rehabilitation. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Physical Medicine and Rehabilitation of the California Medical Association, and the summaries were prepared under the direction of Murray E. Brandstater, M.D., and the panel.

UNIVERSITY OF MARYLAND, BALTIMORE

Osteoporosis in Men With Spinal Cord Injuries

THE development of osteoporosis in men with spinal cord injuries has not been systematically studied. In the general population, bone mass declines with age. Factors associated with aging account for the slow phase of bone loss, which begins in the cortical bone by age 40 and continues at a rate of 0.6% annually. In trabecular bone the process may begin earlier and continues at a rate of 0.7% per year. It is well known that spinal cord injury is accompanied by bone mass loss due to accelerated bone remodeling with bone resorption exceeding bone formation.

Senile bone loss (type II osteoporosis) is largely due to decreased intestinal calcium absorption, with compensatory secondary hyperparathyroidism resulting in increased bone resorption. A study of bone turnover in older bedridden patients showed that the increased bone resorption is not due to "type II" secondary hyperparathyroidism; rather, the bone resorption is primarily increased. For this reason, we would expect a pronounced pattern of osteoporosis in older patients with spinal cord injury that differs from senile (type II) osteoporosis. The lack of load bearing on the bone with increased bone resorption could be postulated as a primary factor.

In a recent study of men one to 59 years after spinal cord injuries, the demineralization pattern revealed no evidence of osteoporosis in the spine at any time. The hips, however, had osteoporosis to the fracture threshold at one to nine years after injury. Hip bone mass continued to decline with age, but the spine bone mass continued to rise. Dual-energy x-ray absorptiometry (DEXA) measurements were correlated with hip and spine x-ray films. Although the spine films showed an accelerated development of osteoarthritis, there was no evidence of degenerative arthritis in the hips of men with spinal cord injuries. The spine bone mass remained at 120% to 130% compared with controls. The lowest detected bone mass at the hips was 65% of that in controls (three standard deviations below fracture threshold) at 30 to 39 years after injury. After the lowest decline, the hip bone mass began rising past the fracture threshold by 40 to 49 years after injury.

There were no further changes detectable with DEXA later on in hip or spine bone mass of patients with spinal cord injuries. The study evaluated patients as long as 50 to 59 years after injury.

It is not surprising that three quarters of these men have hip fractures during routine activities. There is no standard treatment regimen for fracture management in these patients. Some patients undergo operative procedures. Most are left to heal with bulky callus that predisposes them to pressure sores caused by poor sitting positions.

Preventive intervention should begin one year post-injury. If bone densitometry studies reveal osteoporosis of the appendicular skeleton at a significant degree (two

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standard deviations below normal), treatment may be initiated earlier then one year after injury. The recommended dose is 10 mg daily prior to the first meal. The length of treatment should be based on DEXA measurements obtained at six-month intervals.

Suzanne M. Szollar, M.D.
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New Approaches to Managing Spasticity in Children With Cerebral Palsy

CEREBRAL PALSY is the most common childhood physical disability, affecting as many as one in 400 children. This nonprogressive disorder of movement and posture is caused by varied congenital, structural, and acquired insults to the central nervous system, generally within the first three years of maturation. Patients show various patterns of spasticity, rigidity, dystonia, tremors, ataxia, weakness, and primitive movement patterns with poor motor control and postural responses. Secondary musculoskeletal complications such as contractures, hip instability, and spinal deformity also impede function. Spasticity, characterized by velocity dependent increase in tonic stretch reflexes and exaggerated tendon jerks, is a major cause of impairment and disability.

Treatment approaches for spasticity in cerebral palsy have traditionally included physical and occupational therapy; the use of oral medications such as diazepam, dantrolene sodium, and baclofen; intramuscular chemical neurolysis with phenol or ethanol; and permanent ablative neurosurgical procedures such as selective dorsal rhizotomy. Physical and occupational therapies have limited effects on spasticity. Oral medications have systemic side effects and limited efficacy, particularly in persons with cerebral palsy. Whereas rhizotomy alleviates spasticity in cerebral palsy, spasticity reduction cannot be titrated, resulting in excessive hypotonia in some patients. The intramuscular administration of botulinum toxin for focal spasticity and continuous intrathecal baclofen infusion for generalized spasticity are useful new techniques for managing this disorder in children with cerebral palsy.

Administering purified, commercially prepared botulinum toxin into a spastic muscle results in a temporary (three to six months) reduction in spasticity. Botulinum toxin acts at the neuromuscular junction, preventing the presynaptic release of acetylcholine, thus resulting in functional denervation. In contrast to phenol or alcohol, botulinum toxin can be given without anesthesia, electrical stimulation is not usually required to locate injection sites, and the procedure is no more painful than administering saline solution. Although botulinum toxin is the most potent biologic neurotoxin known, its use for the treatment of disorders such as dystonia, blepharospasm, strabismus, and spasticity has not been reported to cause serious systemic toxic effects. Compared with the administration of phenol or alcohol, botulinum toxin is less painful and is easier to administer. The medication is more expensive, but this is offset by decreased physician time and the absence of anesthesia costs in some children. Repeated administrations can induce eventual antibody formation and decrease efficacy, but spacing serial injections at least two to three months apart may prevent this problem.

Continuous intrathecal baclofen infusion using a refillable, programmable, implanted pump can reduce upper and lower extremity spasticity in patients with cerebral palsy. Baclofen is a γ-aminobutyric acid agonist acting primarily at the spinal cord level, but it crosses the blood-brain barrier poorly. Oral administration at higher doses may result in serious systemic side effects. Intrathecal infusion results in a substantial increase in cerebrospinal fluid concentrations and a manifold increase in spasticity reduction at about 1/100th the daily oral dosage. Candidates for continuous intrathecal baclofen infusion are identified through clinical examination. Efficacy is determined for a specific patient by an intrathecal trial of a bolus of baclofen given through a spinal needle or intrathecal catheter. If the spasticity responds to the trial bolus, the programmable pump is placed in the subcutaneous fat of the lower abdomen and connected to a catheter extending into the intrathecal space. Subsequently, the infusion rate can be adjusted periodically with the use of a computer-controlled, radiotelemetry programmer.

Continuous intrathecal pump infusion of baclofen is highly effective in reducing generalized spasticity in cerebral palsy. Compared with selective dorsal rhizotomy, the pump offers the advantage of titratable spasticity reduction, making it more suitable for patients with underlying weakness who rely on some degree of spasticity to ambulate or perform transfers. In addition, titrating to a higher dose may possibly allow greater upper extremity spasticity reduction. The pump reservoir requires percutaneous refilling every two to three months, and the pump is easily replaced surgically every four to five years, which is the approximate battery life.

Botulinum toxin is currently being used by many clinicians for spasticity reduction. Intrathecal baclofen infusion is approved by the Food and Drug Administration for the management of spasticity of spinal and cerebral origin in patients aged 4 years and older. When applied appropriately, both treatments appear to be promising adjuncts to other interventions for enhancing function in cerebral palsy.

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New Drugs for Improving Injury Outcome in Spinal Cord Injuries

TRAUMATIC spinal cord injury induces the local release of chemical mediators, neurotransmitters, ions, opioids, and chemotactic factors that add chemical and biologic injury to the original mechanical disruption. Current research is aimed at neutralizing these secondary effects as early as possible after injury to preserve function in undamaged tissue. The administration of high-dose methylprednisolone sodium succinate has been shown to improve the outcome after spinal cord injuries. The use of tirilazad mesylate and GM_1 ganglioside is being studied.

In initial trials, methylprednisolone was not effective in improving the outcome. In the second National Acute Spinal Cord Injury Study (NASCIS II), methylprednisolone was given in a dosage of 30 mg per kg of body weight within 8 hours of injury, followed by the administration of methylprednisolone, 5.4 mg per kg per hour, for 24 hours. This regimen produced significant neurologic improvement on six-month and one-year follow-up tests when compared with placebo. As a result the methylprednisolone protocol has become the standard of care. The beneficial effects of methylprednisolone seem to result not so much from the anti-inflammatory effects seen at much lower doses, but rather from an ability to scavenge free oxygen radicals and to block "lipid peroxidation," a rancidification of the fatty acid chains that make up neuron cell membranes.

The search for steroids with less anti-inflammatory and more antioxidant activity led to a group of compounds retaining the tetracyclic steroid nucleus but being able to profoundly suppress lipid peroxidation. So far their success has been so great that the agents have been given the name "lazeroids" (after Lazarus). The use of the most promising of these, tirilazad mesylate, greatly improved walking ability in cats if given within four hours of injury. At eight hours after injury, tirilazad was no longer effective even at triple the dose.

Third NASCIS Trial

Tirilazad has been included in one of the three treatment arms in the NASCIS III trial. Treatment arm 1 consists of current methylprednisolone treatment; treatment arm 2 consists of the current methylprednisolone treatment extended for two days; and treatment arm 3 consists of the administration of methylprednisolone, 30 mg per kg, followed by tirilazad, 2.5 mg per kg every 6 hours for 24 hours. The study is intended to determine the best time for starting the methylprednisolone regimen, the optimal duration of therapy, and the benefits, if any, of substituting tirilazad mesylate for methylprednisolone after the initial dose.

GM_1 Ganglioside

Unlike methylprednisolone and tirilazad, which can be thought of as "preservative," GM_1 ganglioside is the first seriously studied agent that could be considered "regenerative." When normal GM_1 turnover is blocked by an enzyme (hexosaminidase) deficiency, GM_1-lipid storage disease results (GM_2-lipid storage disease is Tay-Sachs disease). After central nervous system neurons of a cat with GM_1 storage disease were found to have axonal sprouting of most neurons, many GM_1 studies, including a human clinical trial, were undertaken. One study showed that patients receiving GM_1 ganglioside achieved a higher level of functioning than those given a placebo.

Although methylprednisolone, tirilazad, and GM_1 ganglioside are the major agents currently being studied, other agents are being developed. In the future, we can envision paramedics or trained police officers carrying drugs and administering them before a patient is evacuated. In this way, we might see an increase in the percentage of patients with incomplete instead of complete spinal cord injuries.

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Management of Suffering in Patients With Severe Burn Injury

BURN injuries are a frequent, painful, and often disabling form of trauma. Such trauma is estimated to account for 731,000 of emergency department visits and 60,900 hospital admissions annually in the United States. The quality of burn care over the past few decades has improved dramatically, resulting in a consistent increase in the number of survivors requiring rehabilitation. Three important challenges in the treatment of burn patients remain: pain control, emotional adjustment, and physical rehabilitation.

Pain control is crucial during acute and intensive phases of burn care. The treatment of partial- and full-thickness burns typically requires frequent dressing changes, debridement, and excision and grafting. Burn wound care is often done daily and may cause more pain than sustaining the burn itself. The use of opioid drugs is the most effective treatment of burn pain, and they should be given immediately and aggressively because virtually no opioid addictions occur in burn patients through treatment. The fear of addiction should not interfere with abating suffering through the appropriate use of opioids. Effective strategies for treating background burn pain include using intravenous morphine sulfate, patient-controlled analgesia, or long-acting orally administered opioids (such as time-release morphine or methadone hydrochloride). Procedural pain is more intense and difficult to control. Morphine or hydromorphone hydrochloride given in a bolus is often effective for dressing changes. Synthetic morphines (fentanyl citrate, alfentanil hydrochloride, sufentanil) are more powerful forms of analgesia but require more careful supervision. If opioid drugs are not effective, a variety of adjunctive interventions should be systematically introduced. These include the use of ketamine hydrochloride, inhalant therapies (such as nitrous oxide), nonsteroidal drugs (such as ketorolac tromethamine), and benzodiazepines. Hypnosis, behavioral interventions, and cognitive-behavioral techniques have been cited as effective nonpharmacologic interventions.

Challenges in emotional adjustment take different forms during each phase of care. When patients are in the intensive phase of care, two of the most common problems reported are anxiety and delirium. Treatment with benzodiazepines and neuroleptic drugs is often warranted, and psychological interventions often focus on survival and supporting family members. As patients improve and become more energetic and lucid, grief reactions, posttraumatic stress disorder, and depression are more prevalent. Brief psychological counseling and a steady flow of information about burn care are useful. Patients often fare well emotionally when their pain is controlled and they see a steady progression in their care. Most patients with burns adjust well in the long run, but a notable proportion report many problems after discharge. Patients showing such difficulties often have burns that result in visible cosmetic effects, amputations, or the restriction of joint function. Returning to work becomes an important issue for many patients. Burn injuries resulting from abuse or assault are unfortunately common.

More attention should be given to the physical rehabilitation of patient with burns. Some of the problems that can seriously affect outcome are scars and contractures, heterotopic ossification, peripheral neuropathy, muscle weakness, and amputations. The goal of treatment of scars conventionally is to minimize hypertrophic scarring through the use of pressure garments made to fit tightly, providing pressure to the skin. The tendency of skin and tissue scarring to cause contractures and joint deformities is counteracted through range-of-motion exercises, stretching, and splinting. Splinting can be either static to place the joint in a position of maximal range and function, or it can be dynamic. Dynamic splinting uses rubber bands or other devices to provide continuous stretching while the splint is being worn. The skin has to be monitored closely for any pressure areas during the wearing of a splint, and the time of splint wearing should be gradually increased as tolerated. Periarticular heterotopic ossification frequently occurs, especially at the elbows. The rate of heterotopic ossification may be slowed with the use of medications such as indomethacin and range-of-motion exercises with stretching to prevent further loss of joint motion. Surgical resection or manipulation may be necessary to restore the range of motion and should be followed by aggressive range-of-motion exercises to prevent recurrence of contracture.

Persons with severe burn injuries will often have generalized muscle weakness from inactivity or due to a peripheral neuropathy. Treatment involves strengthening exercises, but restoring function may also require bracing areas not burned, such as providing ankle-foot orthoses to stabilize the ankle and knee. A final common secondary complication after burn injury involves amputations of the upper or lower extremities. Proper prosthetic fitting and training are essential to ensure the best functional outcome for these patients.

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Laryngeal Chondrosarcoma: A Case Report with Radiological-Pathological Correlation

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Introduction

Chondrosarcomas of the larynx are uncommon neoplasms. These tumors account for less than 1% of all laryngeal tumors[1] and 0.1% of malignant head and neck neoplasms overall.[2] Chondrosarcomas that involve the head and neck have a tendency to arise from osseous structures, especially the maxilla, mandible, and temporal bone.[3] In contradistinction, laryngeal chondrosarcomas are generally considered to be extra-osseous cartilaginous tumors.[4] Low-grade chondrosarcomas have low metastatic potential and usually have a favorable outcome for the patient.[5] We present a case of a low-grade chondrosrarcoma of the larynx which was suspected on the basis of its computed tomographic (CT) scan features.

Case Report

A 70-year-old male presented to an otorhinolaryngologist with a two-year history of hoarseness. He was evaluated and underwent two operations, the first in 1993 in which he had laser excision of true vocal cord polyps, and the second in 1994 for laser excision of redundant false vocal cord folds. Despite surgery, the patient complained of persistent hoarseness. In April 1996 he presented with mild hemoptysis, hoarseness, and left-sided odynophagia. He was diagnosed as having reflux esophagitis and laryngitis, and was treated medically. Approximately six months later the patient presented with bilateral true vocal cord paralysis. Subsequently, a CT scan of the neck was performed to evaluate this new clinical finding. The scan showed asymmetric thickening of the right aryepiglottic fold. There was an ill-defined mass involving the cricoid cartilage bilaterally which was contiguous with the thickened folds superiorly. Irregular, coarse calcification was noted in the mass (Fig. 1A and Fig. 1B). These findings raised the suspicion of either a benign chondroma or a chondrosarcoma involving the cricoid cartilage.

The patient underwent direct laryngoscopy. The cricoid tumor was submucosal and extended into the posterior subglottic airway as well as to the level of the arytenoids. An excisional biopsy was performed. Microscopic examination showed increased cellularity with some binucleate lacunae and cells with increased nuclear atypia. No mitoses were identified (Fig. 2A and Fig. 2B). These histologic findings were consistent with a low-grade chondrosarcoma. Given the relatively small size and low-grade nature of this tumor, close follow-up nonsurgical management was opted for initially with the possibility of laser surgery at a later date.

Discussion

While chondrosarcomas of the larynx are rare malignancies, up to 70% of cartilaginous tumors of the larynx are chondrosarcomas.[4] These tumors typically are slow-growing and exhibit low metastatic potential.[5] There has been some difficulty in differentiating between benign chondromas and chondrosarcomas. Radiographically they are identical being distinguished solely on a histological basis. In fact, the incidence of chondrosarcoma may be

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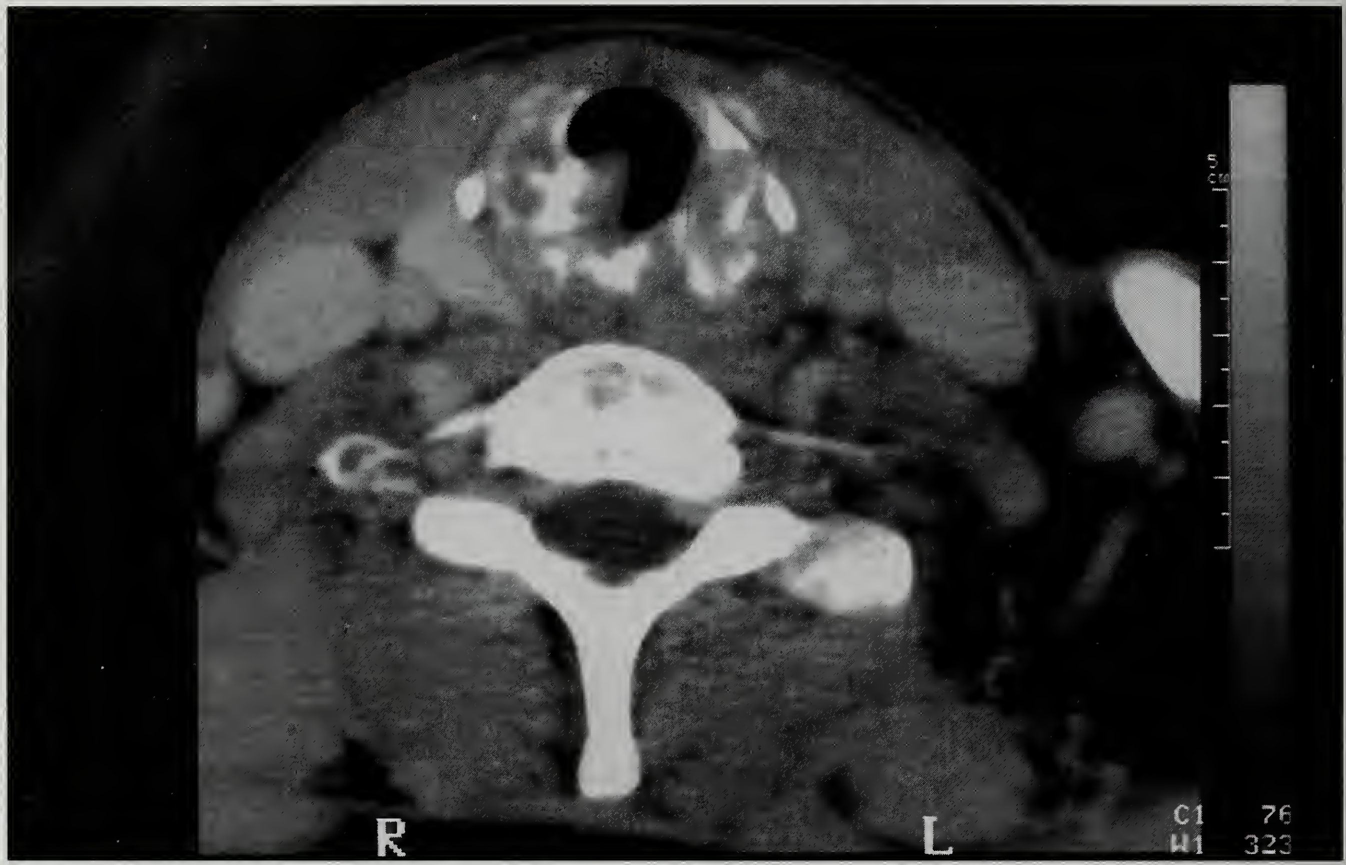

Figure 1A.—Axial nonenhanced CT section at the level of the cricoid cartilage demonstrates a soft-tissue mass containing coarse calcifications, with mild encroachment upon the airway.

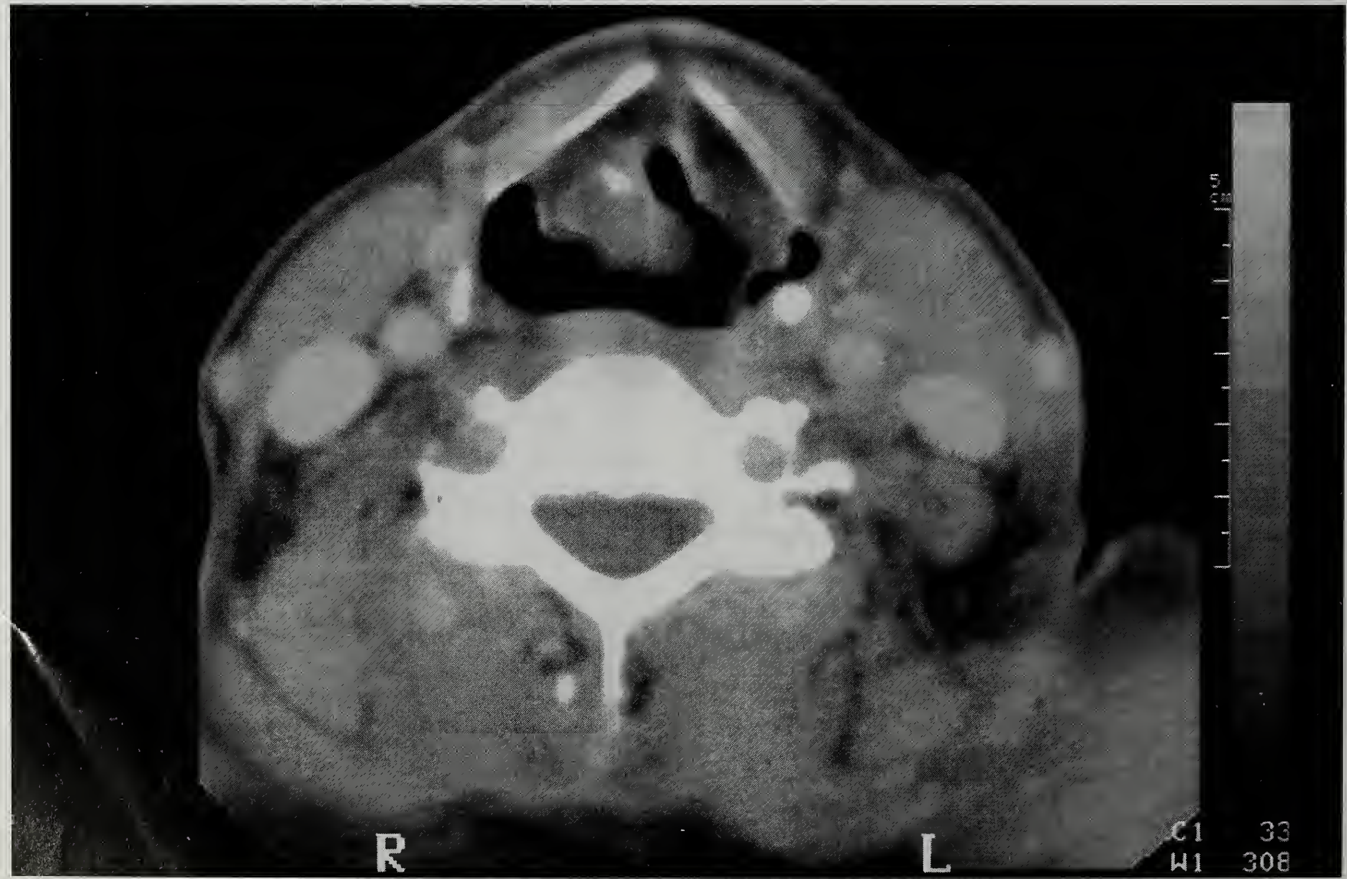

Figure 1B.—Axial nonenhanced CT section at a higher level shows extension to and involvement of the right aryepiglottic fold.

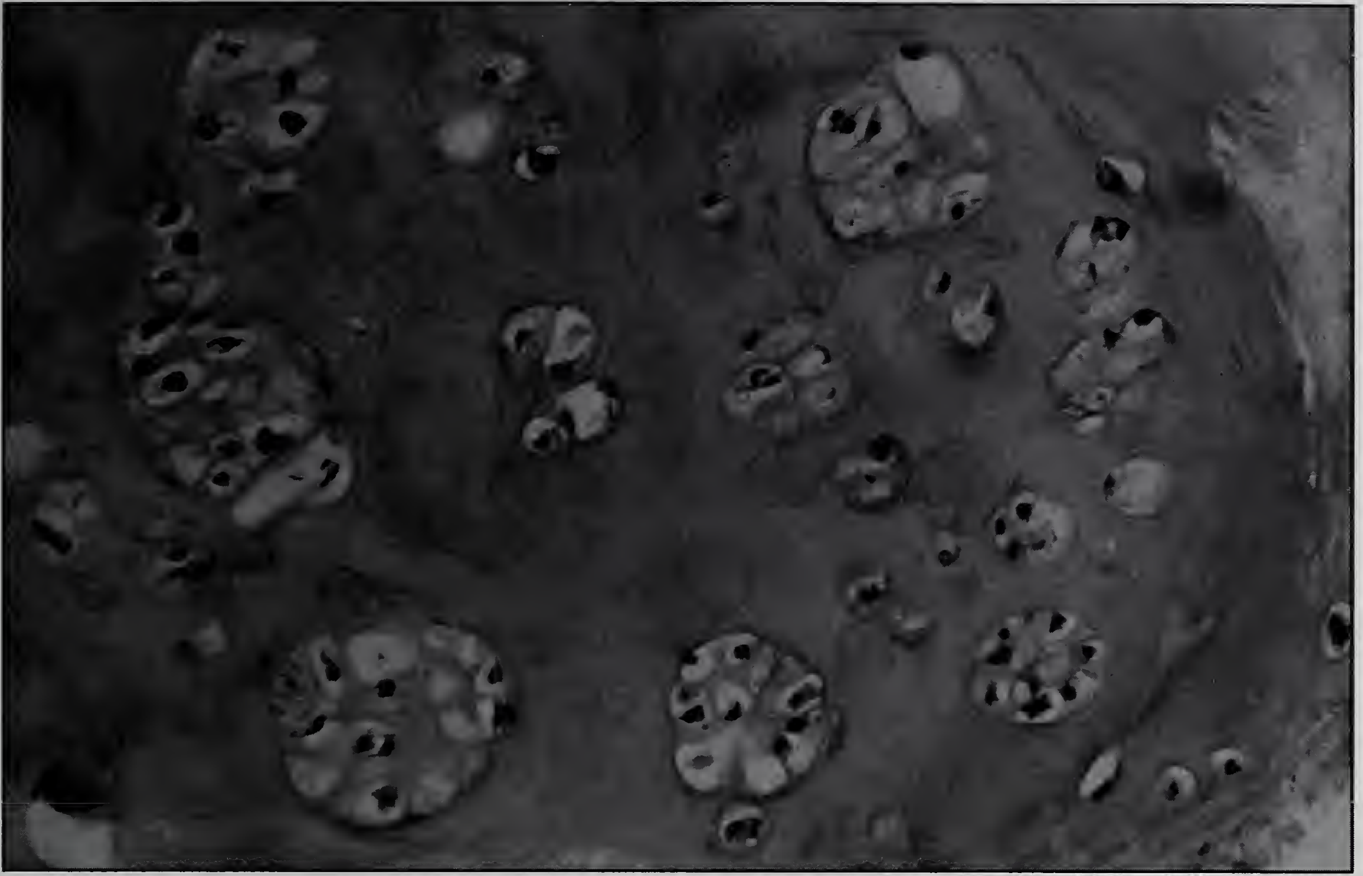

Figure 2A.—Microscopic section of biopsy from cricoid mass showing increased cellularity with prominent nuclei and some lacunae that contain multiple nuclei consistent with a grade I chondrosarcoma.

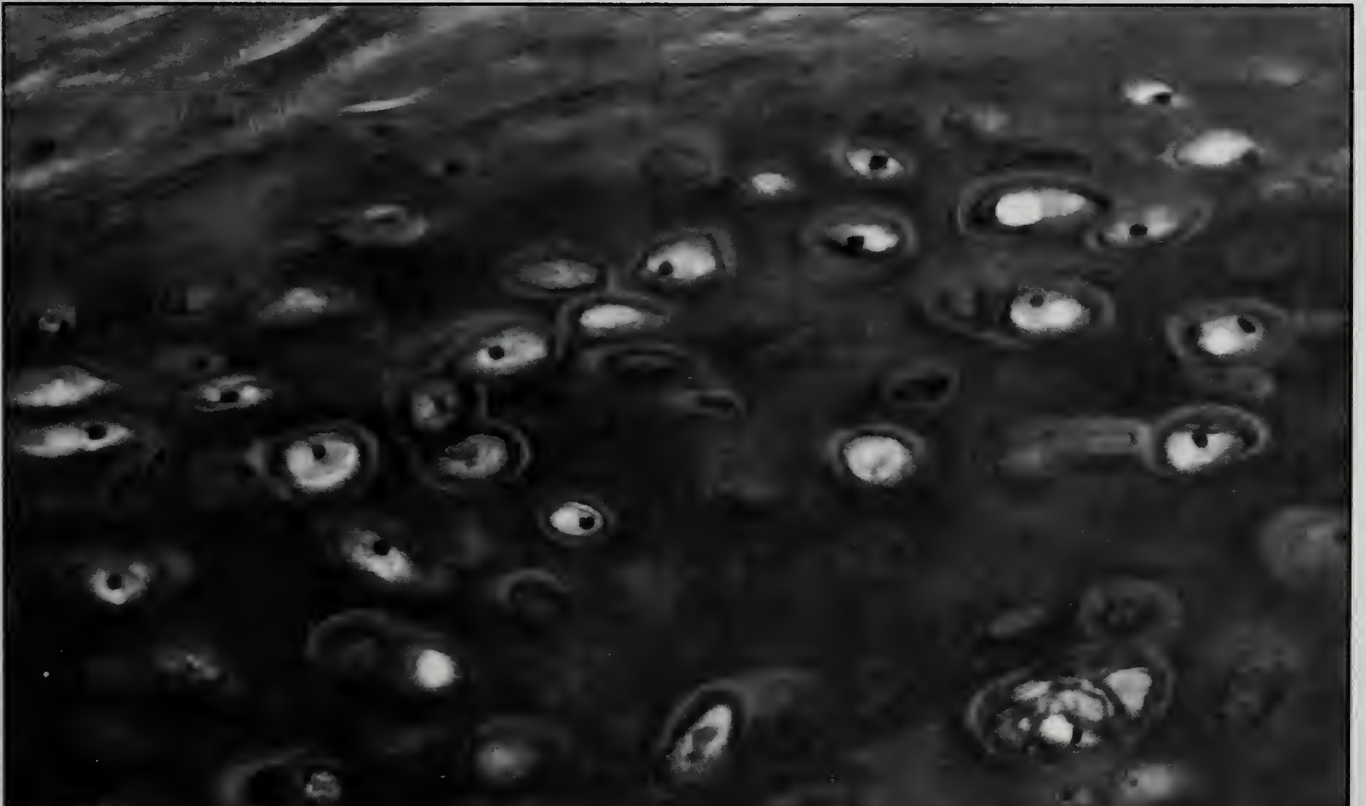

Figure 2B.—Microscopic section of normal cricoid cartilage showing normal cellularity, inconspicuous nuclei, and single-nucleus lacunae.

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underestimated since many laryngeal tumors that were reported as benign chondromas recurred and were probably true chondrosarcomas.[6]

Most laryngeal chondrosarcomas occur in the fourth to sixth decades of life, affecting males more frequently than females. In the larynx, the most common sites of involvement are the posterior lamina of the cricoid cartilage,[4] followed by thyroid cartilage, the arytenoids, vocal cords, and the epiglottis.[7] Presenting symptoms may vary. The most common complaints are hoarseness (75%), dyspnea (56%), and dysphagia. (21%). A palpable neck mass is less common (15%).[2] Vocal cord paralysis is seen in about 50% of patients and is a sign of cricoid involvement by tumor, either by affecting the recurrent laryngeal nerve or secondary to crico-arytenoid joint fixation.[8] When dyspnea is present, growth into the laryngeal lumen usually has occurred. Stridor has been reported, but is not common.[5] Dysphagia indicates growth of tumor posteriorly, and when there is involvement of the thyroid cartilage, a neck mass is typically noted.[3] Both benign chondromas and chondrosarcomas may be identical grossly, and physical examination reveals a smooth, subglottic mass covered by an intact normal mucosa.[5]

Conventional radiography may show a soft-tissue mass involving the laryngeal structures with characteristic chondroid calcification having a stippled appearance.[9] The imaging modality of choice, however, is CT; it offers superior spatial resolution as well as visualization of the complex laryngeal anatomy in the axial plane, and provides more exact localization of the tumor in the larynx. Because of the usual low-grade nature of the neoplasm, it typically shows displacement of surrounding structures rather than infiltration into tissues. Imaging characteristics of chondrosarcoma on CT vary. The tumor may be hypo-, iso-, or hyperdense, or may be mixed. CT can detect calcifications that plain films do not reveal. Coarse calcifications are almost always present and are suggestive of malignancy.[3]

The differential diagnosis for any mass in the larynx must include squamous cell carcinoma, although most of these are above the level of the cricoid. Benign chondromas may be identical to chondrosarcoma on imaging studies. However, chondromas usually present at an earlier age. Other tumors which must be considered include the rare pleomorphic carcinomas, fibrosarcomas typically affecting the vocal cords, rhabdomyosarcomas which generally present before the fourth decade of life, osteosarcomas, and hemangiomas.[1]

Regional and distant metastasis of chondrosarcomas are exceedingly rare with only approximately 20 cases having been reported. When they do occur, common sites are the lung and cervical lymph nodes. One case of metastasis to the clavicles and vertebral bodies has been reported.[10]

The histopathology of chondrosarcoma may vary from a well-differentiated neoplasm similar to a benign chondroma to pleomorphic high-grade tumors with metastatic potential. Histologically, a benign chondroma duplicates normal cartilaginous tissue. Chondromas usually arise in hyaline or elastic cartilage and may show increased cellularity. However, the cells are not cytologically atypical and binucleation is infrequent.[5] Chondrosarcomas typically involve only hyaline cartilage. Low-grade tumors may be difficult to distinguish from a benign neoplasm. Grade I (low-grade) chondrosarcomas may show increased cellularity. The cells demonstrate increased binucleation and may have mild nuclear atypia. Pleomorphism and mitoses are not usually identified. Grade II (medium-grade) tumors display increased cellularity and nuclear atypia. Grade III (high-grade) neoplasms are highly cellular and contain pleomorphic cells that are frequently multinucleated. Numerous mitoses are present.[3]

Some chondrosarcomas are diagnosed histopathologically as being dedifferentiated. This term was first used by Dahlin and Beabout in 1971,[11] and it refers to well-differentiated chondrosarcomas that contain a malignant spindle cell component, usually osteosarcoma or fibrosarcoma. Dedifferentiation is seen in up to 10% of cases of chondrosarcoma overall, typically in those involving the extremities. The prognosis with this pattern is very poor, and patients typically do not survive beyond six months after diagnosis. Pulmonary metastases are more frequently associated with this histologic type.

Surgical excision is the most common treatment for laryngeal chondrosarcoma. Conservative surgery is usual in grade I and most grade II neoplasms. More aggressive surgical intervention is opted for in grade III and in dedifferentiated tumors, with most being managed by total laryngectomy.[11] Most agree that if the tumor involves more than half of the cricoid cartilage that this is another indication for total laryngectomy as well.[5] These tumors are not generally regarded as being radiosensitive or responsive to chemotherapy, although it has been proposed that postoperative radiation therapy may be indicated if the tumor was not totally resectable. It has also been suggested that chemotherapy may be beneficial in cases with metastatic disease, although this remains controversial.[5]

Conclusion

We present a case of low-grade chondrosarcoma of the larynx. Worldwide, approximately 200 cases have been reported in the literature as of 1995. This uncommon tumor is typically slow-growing and rarely exhibits metastatic behavior. CT scan is the imaging study of choice as it offers superior visualization of laryngeal anatomy. Although chondrosarcomas and benign chondromas are of-

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ten clinically and radiographically difficult to distinguish, coarse, irregular calcifications on CT scan are suggestive of malignancy,[3] as in our case.

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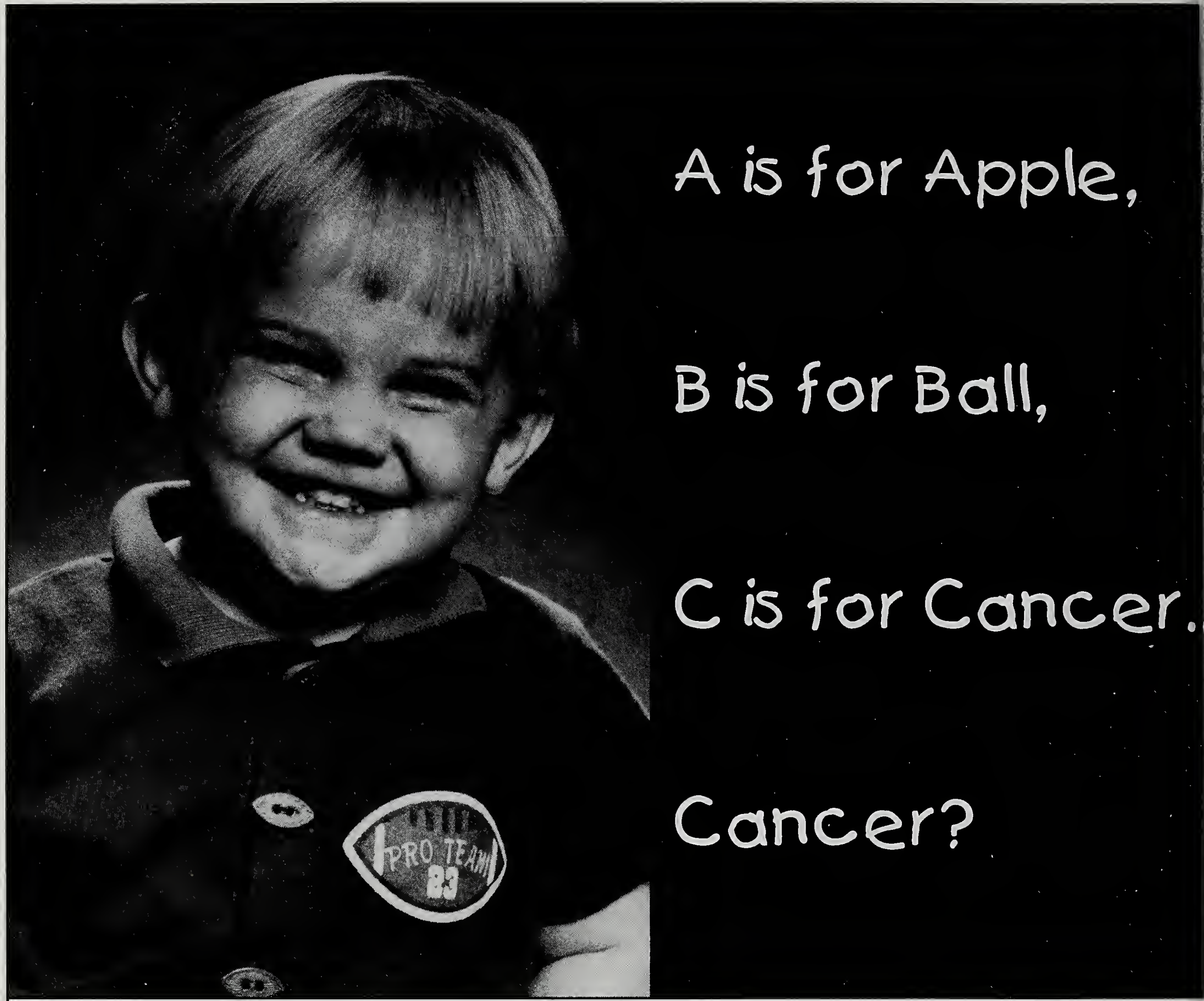

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MORBIDITY AND MORTALITY WEEKLY REPORT

Varicella-related Deaths Among Adults—United States, 1997

DURING January-April 1997, state health departments reported three fatal cases of varicella (chickenpox) to CDC. All three cases occurred in young adult women who were unvaccinated and susceptible to varicella and who were infected by exposure to unvaccinated preschool-aged children with typical cases of varicella. This report summarizes these three cases, which indicate that preventable varicella-related deaths continue to occur in the United States. In addition, the report reemphasizes the recommended strategies for preventing varicella.

Case 1.—On January 19, 1997, a 23-year-old woman in good health had onset of a classic varicella rash. In early January, her 2- and 5-year-old unvaccinated children had had varicella. On January 22, she had onset of shortness of breath and hemoptysis. When she was admitted to a local hospital on January 23, a chest radiograph indicated diffuse alveolar density consistent with varicella pneumonia, and treatment was initiated with oxygen and intravenous acyclovir. Her condition worsened, and she required intubation several hours after admission. Because of increasing respiratory distress, she was transferred to a referral hospital where treatment continued with oxygen, antibiotics, and intravenous acyclovir. On January 31, her rash became hemorrhagic, and she developed disseminated intravascular coagulation (DIC) and renal failure, followed by progression to multiple system failure; she died on February 2. Varicella zoster virus was cultured from skin lesions and from a tracheal aspirate.

Case 2.—On March 11, 1997, a 25-year-old woman in good health had onset of a classic varicella rash, fever, and headache. Her 4-year-old unvaccinated child had had onset of a varicella rash on February 23. On March 12, the woman had onset of cough, and on March 13, shortness of breath. On March 14, she sought care at a local emergency department (ED) because of increasing respiratory difficulty and confusion. Chest radiograph indicated bilateral infiltrates consistent with varicella pneumonia, and arterial blood gases indicated hypoxemia. Varicella encephalitis and pneumonia were diagnosed; she was admitted to the hospital, and treatment was initiated with oxygen and intravenous acyclovir. Four hours after admission, her respiratory difficulty increased, and she required intubation. On March 15, a computerized tomography of the brain revealed severe, diffuse cerebral edema, and she developed renal failure and coma. On March 16, she was transferred to a referral hospital for renal dialysis; an electroencephalogram indicated absence of electrical brain activity, and repeat chest radiographs indicated diffuse infiltrates. She died on March 17.

Case 3.—On April 3, 1997, a 32-year-old woman with Crohn's disease sought medical evaluation at a local ED because of onset of abdominal and back pain. On March 7, therapy was initiated with 40 mg prednisone daily for an exacerbation of her Crohn's disease. By April 3, her steroid therapy had been tapered to 20 mg prednisone daily. On physical examination, she had mild, generalized abdominal tenderness with no specific signs or abdominal guarding. She was afebrile, and a white blood cell (WBC) count was normal. A benign abdominal syndrome was presumptively diagnosed, and she was discharged.

Her symptoms persisted, and on April 4, she sought medical evaluation at the office of her health-care provider. Findings on physical examination were unchanged. Although an abdominal radiograph, abdominal and pelvic ultrasounds, and a WBC count were normal, because of her underlying medical condition, she was referred for surgical consultation. On April 5, the abdominal pain persisted, and she returned to the ED for evaluation. A WBC count was 15,000/mm3 (normal: 3200-9800/mm3), and she was admitted to the hospital. Diagnoses of colitis and ileitis with possible perforation and intraabdominal abscess were considered, and treatment was initiated with broad-spectrum antibiotics. On physical examination, a maculopapular, vesicular rash with crusted lesions was observed on her trunk, head, and neck. Varicella was presumptively diagnosed, and she was placed in isolation. The patient reported that she had had onset of a mild macular, nonpruritic rash on her back on April 3 and that she had been exposed on March 12 and 13 to her 4-year-

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old unvaccinated niece with varicella. On April 6, the vesicles became hemorrhagic, and she began bleeding from intravenous sites. She rapidly developed hypotension and DIC, and died from shock the same day. On autopsy, evidence of viral inclusion bodies in multiple organs was consistent with varicella, and varicella was determined to be the cause of death.

Reported by: B. Watson, MBChB, K. Goodnow, M.P.H, R. Levenson, M.B.A., City of Philadelphia Department of Public Health, Pennsylvania. R. Todd, Dr.PH., D. Nelson, D. Banghart, M.S.P.H., State Health Division, Nevada Department of Human Resources. Child Vaccine Preventable Disease Branch, Epidemiology and Surveillance Division, National Immunization Program, CDC.

Editorial Note: The three cases described in this report indicate that, despite the licensure of varicella vaccine in 1995[1] and availability of antiviral therapies since the early 1980s, varicella-related deaths continue to occur in the United States. Varicella national mortality data for 1990 to 1994 indicate that, although <5% of varicella cases occur among adults aged >20 years, 55% of varicella-related deaths occur among persons in this age group (CDC, unpublished data, 1997). During the prevaccine era in the United States, approximately four million varicella cases were reported annually, including 4,000 to 9,000 hospitalizations and 100 deaths.

Varicella vaccine has been available since March 1995 and is approved for use in healthy susceptible persons aged ≥12 months.[1] All children should be routinely vaccinated at age 12 to 18 months, and all susceptible children aged 19 months to 13 years should be vaccinated by their 13th birthday.[1-3] For persons aged ≥13 years, the priority group for vaccination includes those who are susceptible and who are close contacts of persons at high risk for serious complications (eg, health-care workers and family contacts of immunocompromised persons); however, all susceptible adults may be vaccinated.[1-4] Because varicella vaccine is an attenuated live virus preparation, it is contraindicated for immunocompromised persons, including those receiving immunosuppressive medications (eg, systemic steroids >2 mg/kg bodyweight per day or a total of 20 mg prednisone per day).* Therefore, the most effective method to protect immunocompromised persons is to ensure that their potential susceptible contacts have been vaccinated.[1]

Based on data obtained from three U.S. sites participating in active surveillance for varicella (West Philadelphia, Pennsylvania; Travis County, Texas; and Antelope Valley, Los Angeles County, California), 0% to 20% of 2-year-olds received varicella vaccine during 1995-96 (CDC, unpublished data). Potential barriers to achieving high coverage levels with this vaccine include the perception that varicella is mild and vaccination is not warranted, concerns about long-lasting immunity and effectiveness of the vaccine, stringent vaccine storage and handling requirements, vaccine availability and cost, inadequate insurance coverage,[5] and the inherent lag-time in fully incorporating a new vaccine into existing vaccination programs. A recent survey of Connecticut physicians' knowledge, attitudes, and practices regarding recommendations from the Advisory Committee on Immunization Practices (ACIP) and the American Academy of Pediatrics (AAP) for universal varicella vaccination of infants suggested similar barriers to vaccine use; in addition, physicians who disagreed with the ACIP and AAP recommendations were less likely to use the vaccine than those who agreed with the recommendations (Connecticut Department of Public Health, unpublished data, 1996). Public health agencies can address perceived barriers by educating health-care providers and the general public about the following: complications associated with varicella, especially in adults; the availability of a vaccine highly effective against severe disease[1]; evidence indicating long-lasting vaccine-induced immunity[6,7]; and the importance of early antiviral treatment for adults and others with cases of varicella who are at high risk for complications of disease. Beginning in 1997, inclusion of reporting of varicella vaccine coverage in version 3.0 of the Health Plan Employer Data and Information Set (HEDIS) also should assist in accelerating implementation of varicella vaccination in managed-care organizations.

At least three recommended strategies can assist in preventing varicella-related deaths among adults. First, antiviral therapies should be used more optimally. Varicella zoster immune globulin (VZIG) is recommended for postexposure prophylaxis in susceptible persons at greater risk for serious complications from varicella, such as immunocompromised persons (e.g., persons with human immunodeficiency virus infection/acquired immunodeficiency syndrome, malignancies, or receiving steroid therapy). Although VZIG is effective in reducing the severity of varicella when administered up to 96 hours after exposure, the agent should be administered as soon as possible after exposure.[1] If varicella develops, infected persons may benefit from effective therapies that reduce disease severity and complications (eg, acyclovir[8]). For maximum benefit, such therapy should be initiated within 24 hours of rash onset or as soon thereafter as possible. Second, susceptible adults should be vaccinated with varicella vaccine. Approximately 95% of U.S. adults have

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*The exception is children with leukemia in remission who may be administered the vaccine under a strict protocol. A clinical trial is under way testing the safety and efficacy of the vaccine in asymptomatic children with human immunodeficiency virus infection/acquired immunodeficiency syndrome.

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acquired natural immunity to varicella[9]; therefore, only a small proportion of adults need to be vaccinated. Because only approximately 10% to 30% of adults with negative or uncertain histories for varicella are actually susceptible,[1] serologic testing followed by vaccination of identified susceptible persons may be more cost effective for adults than administration of two doses of vaccine to adults with negative or uncertain histories for varicella. Two of the decedents in this report were eligible for varicella vaccination. Third, susceptible children should receive routine vaccination for varicella. Although both ACIP and AAP recommend routine or universal varicella vaccination by age 12 to 18 months, both permit vaccination of susceptible children at any age.[1-2] All three deaths in this report may have been prevented by vaccinating the preschool-aged family members to whom the decedents had been exposed.

A comprehensive assessment of the impact of varicella vaccination on varicella related morbidity and mortality will require establishing surveillance systems to monitor incidence, hospitalizations, and deaths from varicella. Consequently, state public health agencies are encouraged to initiate ongoing surveillance; investigate all varicella-related deaths; and consider establishing reporting systems for varicella cases in schools, day care centers, health-care provider offices, or hospitals.

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Armorers and Barber Surgeons: A Remarkable Legacy

Graduation Address for the Newington Orthotics and Prosthetics School

20 May 1996

JOHN V. BANTA, M.D.

ON behalf of orthopaedic surgeons everywhere, let me congratulate you on this your graduation day, and welcome you into a profession that has provided untold relief to the pain and suffering of human beings for over four hundred years. As we approach the end of the 20th century, it is appropriate to reflect upon the professional liaison that has emerged between our two professions, othopaedics and orthotics, whose focus has been the treatment of the musculoskeletal system.

Amputations have been the most debilitating and disfiguring disabilities from ancient times. According to Herodotus, the author of the earliest history of the ancient world, a Persian soldier, Hegesistratus, was said to be the first known self-inflicted amputee; he amputated his foot to escape from the stocks that held him prisoner, and later made a wooden foot for himself and returned to his warrior occupation. Wooden prostheses were common in the ancient world, and one from approximately 300 B.C. was in the Museum of the Royal College of Surgeons in London until it was destroyed during the London blitz in World War II. Many of the remarkable medical advances in the ancient world were recorded in the works attributed to Hippocrates (460-377?), the father of medicine. He wrote extensively on conditions such as clubfoot, scoliosis, and contractures of the limbs, and described many forms of splints, but like much of the scientific knowledge and culture of the time this was largely forgotten until the end of the Middle Ages.

We owe much of our understanding of anatomy to the artist, scientist, and engineer of the Renaissance, Leonardo da Vinci. His detailed studies of anatomy aided by dissection, established the foundation upon which Andreas Vesalius expanded our understanding of human anatomy through his remarkable book, *De humani corporis fabrica*. Your predecessors in the field of orthotics and prosthetics arose directly from the armorers of the 16th century. Their skill in metallurgy was remarkable for their time and remains today a wonder to behold.

During the Renaissance, medicine was the exclusive domain of those we would refer to today as physicians and pharmacists, who were firmly entrenched in their guilds. Surgery was almost exclusively performed by the barber surgeons, who often were little more than skilled barbers who could, when called upon, incise a boil, open a vein, cauterize a wound, extract a painful tooth, and with a rudimentary knowledge of anatomy ply their trade as bone-setters. At the close of the age of chivalry before the wide use of gunpowder, there arose from the ranks of these barber surgeons a remarkable surgeon, Ambrose Paré, and he went on to a brilliant career as battle surgeon to the kings of France in the 16th-century Italian Wars and Wars of Religion. Paré is remembered for his disdain for the cautery to control bleeding wounds, and boiling oil for the treatment of open wounds. Instead he promoted surgical ligatures and a cool, emollient dressing. It was also Paré who enlisted the king's armorers to convert breastplates into spinal orthoses. In 1564 he published his great text on surgery in which he described an artificial leg with a workable knee joint made for him by a French locksmith. He described congenital scoliosis, and wrote extensively about spinal deformity over 50 years before Nicholas André. As many soldiers of that time were encased in armor, following battlefield amputations they readily accepted intricate and magnificently fabricated prosthetic hands and body parts constructed by these remarkable

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metalworkers. In 1490 Venetian commanders replaced the crossbow with gunpowder weapons, and by 1550 the first armor-piercing muskets were perfected which led to the demise of total-body armor. The advent of gunpowder destroyed the value of suits of armor, and with the disappearance of intricate armor such mechanical marvels fell into disfavor, only to reemerge in the 20th century with the development of the flexor-driven wrist hinge orthosis at Rancho los Amigos Hospital for the C-6 quadrapegic!

The 18th century saw many advances in science. In medicine Nicholas André (1658-1742) stands out as the father of orthopaedics who, as you all know, coined the term as the title of his treatise in 1741 when he was the professor of medicine at the University of Paris. He made up the term from the Greek roots *orthos* (straight) and *pais, paidos* (child). André devoted much of his professional life to the treatment of childhood afflictions. He utilized braces to great effect and wrote regarding scoliosis, "... if the spine be contoured in the form of an S, the best method you can take to mend it is to have recourse to a whale bone bodice." He also urged the use of leather and wood, in addition to metal for a wide variety of devices.

Warfare has resulted in untold maiming of the bodies of those who survived the gruesome fatality rates, the scourges of malnutrition, or infectious disease which accompanied the wars that plagued the European and American continent during the 19th century. Few had the stoicism of Marie Victor de Fay, Marquis de Latour-Maubourg, a brilliant general in the Grand Armée of Napoleon, who had his leg shot off at the battle of Leipzig while he led a charge breaching the allied central lines. Seeing his domestic weeping at the sight of his poor general, he jested "What are you crying about, imbecile? You now have one less boot to polish!" The rate of traumatic amputation reached unbelievable proportions during our own Civil War wherein an open wound involving a fracture meant death by sepsis without prompt amputation. From this bloodshed American orthotics and prosthetics matured at the end of the 19th century.

In England a remarkable Welsh bone setter, Hugh Owen Thomas (1834-91), was urged by his uncle to study medicine as well, and Thomas went on to become the father of the Liverpool School of Orthopaedic Surgery in England. He devised an ischial weight bearing brace for the treatment of pyarthrosis of the hip. However, he is best remembered for the Thomas Splint which saved countless limbs and lives during military conflict, especially during the nearly disastrous evacuation of wounded allied soldiers at the Battle of Dunkirk in May and June of 1940. Thomas employed many skilled brace makers in his busy Liverpool practice and published widely his theories of splintage and noninvasive orthopaedics, thus expanding the close relationship between our two specialities. William John Little, well known for his early descriptions of cerebral palsy, made a landmark contribution to the field of operative orthopaedics. Having acquired a severe talipes equinovarus following childhood poliomyelitis, he sought out Georg Friderick Stromeyer in Hannover, Germany, who had performed limited percutaneous heelcord tenotomy. Following successful treatment himself, he perfected the technique, introduced it to England, and, in 1840, founded an orthopaedic infirmary which, in 1904, became the Royal National Orthopaedic Hospital.

In New York City the relationship between orthopaedic surgeons and orthotists blossomed in 1863 when 20 men founded the New York "Society for the Relief of the Ruptured and Crippled," which opened as the Hospital for the Ruptured and Crippled under the director of the founding surgeon James Knight. The Society's certificate of incorporation succinctly reads "... that the particular business and object of such a Society shall be to supply skillfully constructed surgico-mechanical appliances and the treatment of in-and -out patients requiring trusses and spring supports; also bandages, laced stockings, and other suitable apparatus for the relief and care of cripples, both adults and children, and so far as possible to make these benefits available to the poorest in the community." Subsequently this hospital relocated adjacent to the Cornell Medical Center where its name was changed to The Hospital for Special Surgery. This hospital has trained hundreds of orthopaedic surgeons, including Dr. Burr H. Curtis, for whom this building in which we are gathered today is named.

Children's hospitals proved to be the centers of orthotic, prosthetic, and orthopaedic care, especially with the development of the Shriners' Hospital system and numerous other hospitals similar to Newington Children's Hospital. The end of World War II ushered in what will be in the future, in my opinion, referred to as the golden age of orthotics and prosthetics. In 1945 the National Academy of Sciences under the direction of an orthopaedic surgeon, Norman Kirk, Surgeon General of the Army, focused upon the rehabilitation of the vast number of war casualities with limb deficiencies. An office of Scientific Research and Development together with the Veteran's Administration developed testing laboratories in New York City and at the University of California, Berkeley. This effort combined the best minds in medicine, surgery, rehabilitation, and orthotics and prosthetics, with the technological advances of the aviation industry.

Canadian researchers improved prostheses for Syme and hemipelvectomy amputations at Sunnybrook Hospital in Toronto with the support of the Department of Veteran Affairs of Canada. This was later transferred to the University of California at Berkeley. In rapid succession, the "patellar tendon bearing" prosthesis, myodesis

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techniques, and immediate postsurgical prosthetic fitting rapidly evolved. Unique new materials which we now take for granted were suddenly available for orthotists and prosthetists: aluminum, rubber, cable suspension systems, plastics, resins, acrylics, and modern fabrication techniques leading to computer assisted design and manufacturing systems.

With the National Association of Science the Child Amputee Clinic Chiefs Program was developed, which in turn formed the Association of Children's Prosthetics and Orthotics Clinics (ACPOC). The advances in science and education resulted in the formation of the American Board of Orthotics and Prosthetics in 1948 which is the national certification body for the profession of orthotics and prosthetics.

At Berkeley, a pioneering orthopaedic surgeon, Verne Inman, began the modern study of human motion, and his early work was carried on by Perry, Sutherland, and most recently by Gage, Davis, DeLuca, Oonpu, and Romness here at the gait analysis laboratory of the Connecticut Children's Medical Center, which has established a worldwide reputation in the scientific evaluation of human gait and the wide variety of pathologic variants found in neuromuscular disorders as well as limb deficiency. It is, in my opinion, from such centers, that major advances in the future of prosthetics and orthotics will emerge.

You have now fulfilled your training requirements at the first of only two training centers in the United States to be fully accredited by the American Medical Association, where you have had the opportunity to see first-hand the essential teamwork that has brought our two professions together. It is not unlike the unique relationship between the Indianapolis race-car drivers and their mechanics! The common goal is to win, to overcome the often devastating residuals of a congenital or acquired defect of the axial skeleton or the limbs. As this brief historical overview has attempted to show we have all traveled a very long way from the metal breastplates of Paré and the whale bone stays of André, but what of the future?

All of us are faced with rapidly changing market forces that are straining the very social fabric of our professions and causing serious concerns about the training of future professionals. However, I am optimistic that this will be but a momentary pause toward future accomplishments. I caution you not to become lured into commercial undertakings which have as their sole emphasis the manufacture of ever more widgets for ever more profit. We have labored long and hard to refine our talents and skills to provide the best care and devices for our patients. In the field of scoliosis alone there are now large published clinical series confirming the value of orthotic management for a large proportion of children with idiopathic scoliosis. The public has become educated to the value of skilled subspecialists and will look to you to provide their orthotic and prosthetic needs.

With the ever-expanding technology in joint implant surgery, it is not out of the question some day to achieve the successful surgical implantation of a prosthesis. The power of the computer chip has barely been tapped for the potential it can provide the quadriplegic requiring finely coordinated upper extremity control. To remain true to your professional calling you must continue to study and remain current with new techniques and the ongoing challenges we face daily in evaluation of treatment objectives and outcome analyses. For those of you seeking to pursue an academic career, your mentors in this program from which you now graduate provide fine examples of the challenges you may encounter. The future is bright for all of you who keep an open mind to the advances that are certain to come, and I would close with this quote from Ambrose Paré:

> Antiquity and custom in such things as are performed by Art, ought not to have any sway, authority or place contrary to reason, as they oft-times have in civil affairs; wherefore let no man say unto us, that the Ancients have always done thus.

I wish each of you Godspeed and success in your careers, whatever your future course may be.

The Newington Orthotic and Prosthetic School, now in its fourth year trains 40 students annually. One half of each class is trained in orthotics and the other half receive prosthetic training. The curriculum is a unique collaboration between the classroom and fabrication center at Newington, combined with a semester of neuropathology at the University of Connecticut School of Medicine and one quarter of the year spent at the University of Connecticut School of Allied Health. Major Orthopaedic Citations from: Bick, Edgar, *Source Book of Orthopaedics*, 2nd Ed., Baltimore, Maryland: Williams and Wilkins Company, 1948.

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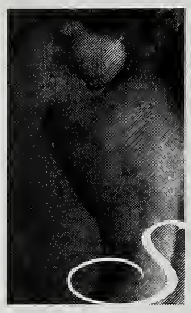

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Managed-care Organizations' Teaching Role: Its Importance in Medical Education

MARIA LENAZ, M.D.

ABSTRACT—One of the central issues driving integrated system development is educating physicians in managed care. Managed-care organizations need to become more involved in medical education, especially its clinical teaching functions. This affects largely the ambulatory aspects of care and generalist physician training. Academic medical centers and managed-care organizations can achieve this mission through collaboration.

TO date, managed-care organizations' involvement in medical education has been a limited opportunity. As managed-care organizations (MCOs) move further into the mainstream of health care, their involvement with medical education most likely will increase. The growth of managed care is changing the practice of medicine. Graduate medical education must be transformed if it is to prepare physicians effectively for the evolving health-care system. An interdisciplinary approach may prove to be the best strategy for educating physicians to deliver cost-effective, comprehensive care in a changing health-care marketplace.[1]

There are a number of content areas that managed-care education needs to stress. These areas should include an understanding of managed care, capitation as well as other financial models, alternative levels of care and associated cost structures, referral management, communication skills, patient satisfaction and service levels, and total quality management.[2]

With the shift of the health-care delivery system to the outpatient setting and greater reliance on primary-care physicians, MCOs will be drawn further into teaching functions.

MCOs have much to gain by becoming more involved in the education of medical students and residents. They will be able to provide real data and apply learning to practice. As a result, they will find it easier to recruit new physicians to their organizations, as well as to improve the morale of their existing providers. This may be tailored to specialties, as one size does not fit all. Physicians will have lower utilization patterns, as they learn to use resources more efficiently and the actual quality of care will increase. In addition, the perception of the organization from the community's perspective will be raised.[3]

In teaching managed care, it is important for physicians to understand the basics of managed care. In addition, case studies on subjects such as referrals to specialists and using practice guidelines have been found to be very beneficial. In discussing patient management, both the provider's and the managed-care organization's perspective on how best to approach the utilization review process may be presented by providing utilization review case studies for discussion.[4]

Traditionally, academic health centers and health maintenance organizations have held each other at arm's length because of fundamental organizational differences. Academic health centers view health maintenance organizations as being intrusive into the clinical management of patients and to be concerned primarily with the financial bottom line. Health maintenance organizations view academic health centers as fragmented with divisional fiefdoms and expensive in providing health- care services. The vision and mission of the academic health center must

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MARIA LENAZ, M.D., M.S., F.A.C.O.G., medical director, Oxford Health Plans; clinical assistant professor, Department of Obstetrics and Gynecology, Yale University School of Medicine, New Haven.

involve expanding its primary-care networks to educate a more balanced physician team. Health maintenance organizations are growing rapidly and need well-trained primary-care physicians to support that growth. In examining academic health centers and health maintenance organizations, one can identify common needs, mutual interests, as well as areas for collaboration. With the further development of health-care systems, information management systems, health services research, professional education will play a pivotal and critical role. As the financing and delivery of health care continue to change and to become more integrated, both organizations have much to gain from collaboration.[5]

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Doctor, I Need My License

DONALD F. BRADLEY, ESQ.

ABSTRACT—Connecticut law permits physicians, without breaching patient confidentiality, to report to the Department of Motor Vehicles persons with health problems that may affect the person's ability to operate a motor vehicle safely.

MANY physicians are not aware of a Connecticut law which permits them, without breaching medical confidentially, to report to the Department of Motor Vehicles (DMV) a patient who has a medical problem affecting his or her ability to operate a motor vehicle safely.

In 1990 an archaic Connecticut law requiring physicians to report persons with epilepsy to the Department of Public Health, under threat of a criminal sanction, was changed at the request of DMV. The present law, §14-46 of the Connecticut General Statutes, now "permits" physicians to report to DMV "any person diagnosed ... to have any chronic health problem which in the physician's judgment will significantly affect the person's ability to safely operate a motor vehicle...." Persons who have recurrent periods of unconsciousness uncontrolled by medical treatment may also be reported. Optometrists may similarly report persons with vision problems. The present law permits the commissioner to keep such reports confidential, and to be "used solely for the purpose of determining the eligibility of any person to operate a motor vehicle on the highways of this state." DMV makes every effort to maintain physician confidentiality. The report, however, is subject to disclosure in administrative hearings if there is a license suspension action by DMV; consequently the confidentiality afforded to the physician is not absolute.

Upon receipt of a medical report, DMV will analyze it to determine if, based on the report, emergency action is required, *ie*, does the evidence show that the person is an imminent threat to public health, safety, or welfare when operating a motor vehicle. If so, a finding reflecting DMV's conclusion will be made, and the person's operator's license will be withdrawn immediately (as distinguished from a license suspension, which implies fault). DMV then schedules an administrative hearing for the person in order to comply with the person's constitutional right to due process of law.

In most cases, however, emergency action and immediate license withdrawal are not necessary. In these cases DMV sends a medical form to the person, requesting that it be completed by the person's physician and returned to DMV within an assigned time period. Both general and specialized medical forms are available.

Sometimes more than one medical report is needed to complete the medical picture. The person also receives notice that he is entitled to request a hearing before administrative licensing action is taken by the DMV either to withdraw or restrict the person's operator's license. A person is entitled to appeal to the Superior Court from any adverse administrative hearing decision by the DMV.

The DMV is not expert in medical matters, and unless there is clear and convincing evidence in the medical reports that a person has a health problem which impairs safe driving, DMV will send the person's medical file to its Medical Advisory Board for review and recommendation.

Since it is often difficult to determine how a particular health problem may affect driving ability, it is sometimes recommended, by either the Medical Advisory Board or

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DONALD F. BRADLEY, Esq., Connecticut Department of Motor Vehicles.

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an administrative hearing officer, that the person take and pass an on-the-road driving test. The important point for physicians is that it is the DMV which is charged with the duty to determine whether the person can hold an operator's license, not the physician. For physicians who are uncertain if the person's health problem affects his or her ability to operate a motor vehicle safely, a report to the DMV providing the necessary medical information and requesting that DMV administer a driving test is an appropriate step. In many cases it would be appropriate for the physician to make the report to DMV with the consent of his patient, since patients with health problems are often insecure about their driving ability and concerned with safety.

If a physician is reluctant to report a person to the DMV, a family member may do so, but the report to DMV is then required to be signed and under oath. No anonymous reports to DMV are acted on, eliminating the possibility of harassment and assuring that DMV has the reliable evidence needed to make the person's medical condition a concern of the State. Police reports are also considered reliable evidence and can trigger a medical evaluation by DMV.

The DMV has a "graduated" licensing program which allows persons with a health problem to obtain a limited license permitting operation within the person's capabilities, such as driving during daylight hours only, or not driving on limited access highways. The DMV is sensitive to the needs of persons with health problems, and has specially trained inspectors who will go to the person's home, in civilian clothes, to give an on-the-road driving test, rather than subject the person to the stresses of going to a DMV branch office and taking a test given by a uniformed officer. Senior citizens in particular are benefited by this DMV policy.

The purpose of this overview is to alert Connecticut physicians that reporting to DMV a patient who has a health problem, and may be a threat to safety, is not necessarily the end of independence for the patient, that confidentiality of the report and the identity of the physician is possible, that many persons with health problems can be issued a limited license by the DMV, and that the DMV does have a heart.

There is another side to this issue that should be mentioned for completeness. Failure of a physician to report a person who has a health problem which affects his driving safety could lead to liability of the physician. In a Superior Court case (*Wozniak v New Britain General Hospital*, 16 CONN. L. RPTR. No. 18, 568, July 1, 1996) the Court stated that "the legislature expressly addressed and discarded civil immunity for physicians who failed to report medically impaired persons to the DMV." Thus a physician may be liable in tort for failure to report to DMV an impaired patient who subsequently causes injury while operating a motor vehicle. The statute, however, specifically limits the physician's reporting obligation to those instances where it is the physician's "judgment" that the patient's ability to operate a motor vehicle is impaired. In some instances such impairment is obvious, and if the physician has reliable information that the patient is driving against medical advice, a report to DMV clearly would be appropriate. In view of the statute, such report would not be a breach of medical confidentiality.

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Editorial

The Supreme Court's Desision: The Debate Will Continue

Last month the Supreme Court did what we hoped and expected they would do: they declared their failure to discover, even in the penumbra, that mystical cloud that hovers about the Constitution, a right to physician assisted suicide. The surprise was that their ruling was unanimous rather than limited only to the more conservative justices. Even a pleading from a group of some of the most distinguished American philosophers did not avail. Those of you who happened to see the text of the philosophers' amicus curiae letter must admit that it was remarkably, even amazingly, shallow, further evidence that Plato erred when he suggested that his republic be ruled by philosopher kings. One commentator noted that there was not one thing in their brief that would have required a philosopher to write it!

The Court's 9 to 0 decision lends strength to the American Medical Association's repeatedly stated opposition to this unseemly effort to make physicians into executioners. It strengthens also the clear distinction between killing and letting die, a distinction which has recently as this month (10 July) a *Hartford Courant's* editorial failed to see. But the matter is not closed. Rather it has been tossed into the hands of 50 state legislatures who could hardly avoid an issue that apparently has so much popular support. Even some commentators have asserted that the permission to use pain-relieving medication in doses that might shorten life is physician-assisted suicide, even active euthanasia, rather than the unintended effect of an action intended only to provide comfort.

John J. Paris, professor of bioethics at Boston College, notes that modern technology may too often for many "... ward off death but not restore health, in a situation worse than death itself—an endless prolongation of their dying." He quotes George Annas, Utley Professor of Health Law at Boston University, as commenting that Dr. Kevorkian "is not simply an aberrant physician, he is 'a symptom of a medical care system gone seriously wrong at the end of life.'"

Two major tasks lie ahead for us in medicine: one, to emphasize at all levels of the education of physicians that pain control, comfort, reassurance, standing by are more important *than anything else that we do.* The second is to make clear to our patients the choices they may make at the end of their lives.[1] There are many ways of doing this, but reading off a list of options to a virtual stranger suffering from a mortal disease is not the way to do it. The patient should know that we are quite prepared, if that should be her wish, to abandon any further attempts to diagnose and cure *but we will never abandon her.*[2,3] The hospice principle of palliative care when there is no reasonable expectation of cure should permeate medicine. Perhaps patients will not then be so frightened of the unfamiliar technological terrors that may lurk in some intensive care unit, or the long, painful ordeal of tests, treatments, tubes, nausea, pain, and despair, the "endless prolongation of their dying," that has become for many the caricature of modern, impersonal, technological medicine. The anticipation of such a "wild death," as Daniel Callahan calls it, leaves few alternatives to sanitized, medicalized suicide.

R.U.M.

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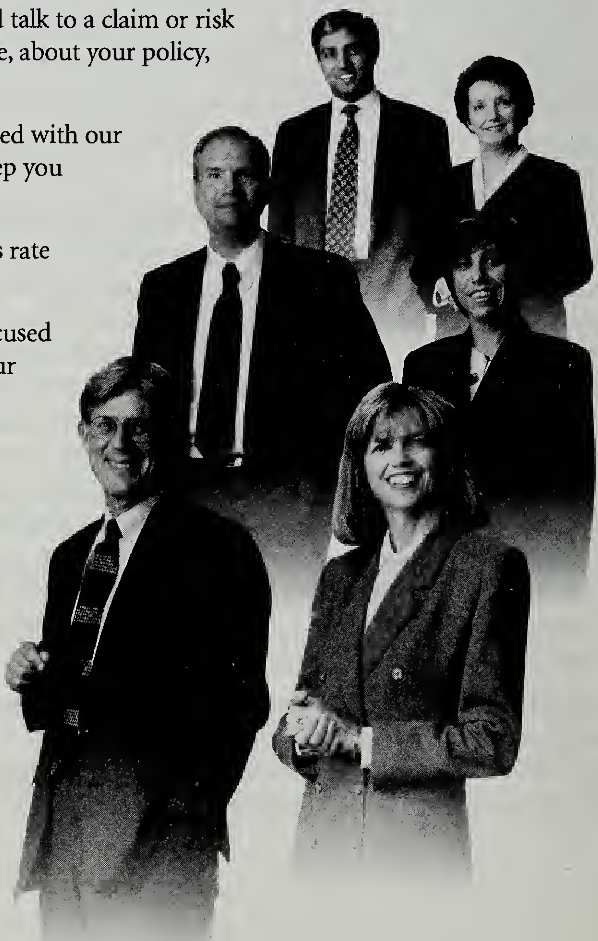

50 Years Ago

From *The Connecticut State Medical Journal*

July 1947

News from Yale University School of Medicine

Yale School of Medicine Announces New Appointments

The appointment of Prof. C. N. H. Long as dean of the School of Medicine was announced by President Seymour at the Alumni luncheon on Monday, June 16. Dr. Long came to Yale in 1936 as the successor of Prof. Lafayette B. Mendel, Sterling professor physiological chemistry. The pioneer studies on metabolism of Prof. Mendel associated with Prof. Thomas B. Osborne, it was recalled, had placed Yale in the foreground as the center of education and investigation of metabolism. This leadership has continued under the able direction of Dr. Long in the period when the importance of the subject has expanded greatly with the demonstration of the intimate control many of the ductless glands exercise over metabolism.

Dr. Long had achieved wide recognition for his contributions to science, both at McGill University, 1925-32, and as the director of the George M. Cox Research Institution at the University of Pennsylvania, 1932-36, before he joined the Yale Faculty.

With the constantly expanding staff of able representatives in the various subdivisions of the subject, his department has not only retained, it has advanced its position of leadership in both endocrinology and metabolism.

Dr. Long has been closely associated with the administration of the School of Medicine since he joined the Yale Faculty. As acting dean in 1943, and more recently as chairman of the Executive Committee of the School, he has demonstrated fully his broad comprehension of the many aspects of administration in medicine. His appointment assures continuance of the intellectual growth of the School of Medicine as a section of the University.

Dr. Long succeeds Dr. Francis G. Blake, who has served with distinction as dean during the past seven years, including the war period. He continues to serve as professor and chairman of the Department of Internal Medicine and as physician-in-chief of the Grace-New Haven Community Hospital, positions he has occupied since 1921.

Dr. Blake's contributions to the nation as consultant to the Secretary of War and as president of the Board for the Investigation of Epidemiological Diseases were recognized by the Award of the Medal of Merit.

Other appointments at the School of Medicine include: Dr. Donald H. Barron as professor of physiology, Dr. Daniel C. Darrow as professor of pediatrics, and Dr. Herbert Thoms as professor of obstetrics and gynecology and chairman of the department.

Dr. Bayne-Jones Receives New Appointment

Dr. Stanhope Bayne-Jones, professor of bacteriology, Yale University School of Medicine, and director of the Board of Scientific Advisers, Jane Coffin Childs Memorial Fund for Medical Research, was recently appointed president of the Joint Administrative Board of the New York Hospital-Cornell Medical Center.

The appointment, which will become effective July 1, was announced jointly by Dr. Edmund Ezra Day, president of Cornell, and William Harding Jackson, president of the New York Hospital. These institutions share in the operation and maintenance of the Medical Center, located at 525 East Sixty Eighth Street.

Dr. Day explained that the new position is that of chief executive of the joint board, which includes representatives of the hospital and the university He stated that the position has been created to "implement the center's full potentialities for public service," and added that Dr. Bayne-Jones "will be responsible for the formulation of policies and an overall program for the center."

Reprinted from the *Connecticut State Medical Journal*, July 1947.

A leader in cancer research and public health, Dr. Bayne-Jones was dean of the Yale School of Medicine from 1935 to 1940. He is a veteran of both world wars and served in the Office of the Surgeon General as Deputy Chief, Preventive Medicine Service, administrator of the Army Epidemiological Board, and director of the United States Typhus Commission, from 1942 to 1946. He received his separation from the military service in the rank of brigadier general, and is still medical consultant to the Secretary of War.

Born fifty-nine years ago in New Orleans, Dr. Bayne-Jones graduated from Yale University in 1910, received his M.D. and M.A. degrees at Johns Hopkins School of Medicine in 1914 and 1917. He holds honorary degrees of M.A. from Yale University and Doctor of Science from the University of Rochester.

His first appointment was that of associate professor of bacteriology at Johns Hopkins, a position which he held until 1924, when he became professor of bacteriology at Rochester School of Medicine. He received his professorship in bacteriology at Yale University School of Medicine in 1932.

Dr. Bayne-Jones entered the first World War in 1917 as a captain in the Medical Corps, serving with the British in Flanders and Italy, and later with the American Expeditionary Force in France. Following the armistice, he was named Sanitary Inspector for the Army of Occupation, in Germany. His military decorations include the Distinguished Service Medal, Silver Star with two oak leaf clusters, United States of America Typhus Commission Medal, Army Commendation Ribbon, British Military Cross, Honorary Commander of the Order of the British Empire, and the French Croix de Guerre.

The announcement of the new appointment followed within several days the presentation to Dr. Bayne-Jones of the Dr. Charles V. Chapin Memorial Award by the City of Providence, R. I., in recognition of his achievements in preventive medicine. The presentation took place at the 136th annual meeting of the Rhode Island Medical Society and marked the second time the Chapin Medal has been presented to a Connecticut physician. In 1945 the medal was awarded to Dr. Francis G. Blake, Sterling professor of medicine, Yale University School of Medicine, and physician-in-chief, New Haven Hospital.

Streptomycin Therapy of Pulmonary Tuberculosis

The isolation in 1944 of a potent anti-bacterial agent by Waksman and his collaborators from the "ray fungus," *Actinomyces griseus*, opened a new and promising field of anti-bacterial therapy for human tuberculosis. This agent, known as streptomycin, has been the object of considerable investigation during the past several years. While the place of streptomycin in tuberculosis therapy has not yet been clearly defined as a result of these studies, it does appear that this agent not only effectively inhibits the growth of the tubercle bacillus in the test tube, but also may significantly alter the clinical course of human pulmonary tuberculosis when administered in adequate dosage for prolonged periods.

In the Fall of 1946, a cooperative clinical study by eight civilian sanitoria and hospitals was undertaken by agreement between and under the sponsorship of a number of manufacturers and the American Trudeau Society. The Laurel Heights State Tuberculosis Sanitorium and Yale University School of Medicine combined efforts in Connecticut as one of the eight centers in the study to investigate the effect of streptomycin upon pulmonary tuberculosis. This group very recently gave a preliminary report of their findings before the Yale Medical Society. In this report, the clinical effect, the development of resistance of the tubercle bacillus, and the toxic manifestations occurring as a result of such therapy were considered.

While the accurate evaluation of any new form of therapy for tuberculosis is notoriously difficult, it would appear from this study that striking improvement was noted in over half of the patients treated at Laurel Heights. In a group of 16 patients, improvement was noted as "very striking" in 5, "exceptionally good" in 4, and "moderate" in 5. In 2 patients there was no improvement.

The excellent response of tuberculosis endobronchial lesions in these patients was particularly noteworthy. These lesions, present in 8 of the 16 patients prior to treatment, all healed under streptomycin therapy although one such lesion promptly recurred after the development of organisms resistant to streptomycin.

Streptomycin, however, is still far from being the ideal drug for the treatment of tuberculosis because of certain severe toxic manifestations that may occur following administration of this drug for a prolonged period. Of particular importance among these toxic manifestations is the loss of vestibular function in a high percentage of the cases treated. In some instances this toxic reaction upon the labyrinth was particularly severe. The mechanism of this reaction is not known. Though rare, impairment of hearing is occasionally encountered, and occurred in one patient treated at Laurel Heights.

The appearance of streptomycin resistant strains of the tubercle bacillus during the course of such therapy was disturbing and constitutes a serious problem. Such strains ordinarily appear after two or three months of streptomycin therapy in those patients who continue to exhibit positive cultures.

While it is difficult at the present time to evaluate the proper place of streptomycin in the therapy of pulmonary tuberculosis, it is suggested that the greatest use of the

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drug may prove to be as an adjuvant to the treatment of tuberculosis by conventional therapeutic measures such as bed rest, phrenic paralysis, pneumothorax, and thoracoplasty. The long term significance of the vestibular disturbance, and of drug resistant strains of organisms are not yet known. Hence, physicians are warned against indiscriminate use of streptomycin, especially in patients whose prognosis with conventional methods of therapy is good.

Further nationwide studies are now in progress to determine the type of tuberculosis which best responds to streptomycin therapy and to more clearly establish proper dosage and spacing of the drug.

A Matter of Opinion

The recent rejection by the State Senate of House Bill No. 953 which would liberalize the present contraceptive law so that physicians could prescribe such measures for health purposes brings to an end another attempt for legislative change in which the doctors of our state have had no inconsiderable interest. The proposed amendment had a great deal of public support as is witnessed by the report of the Committee and its passage by the House of Representatives by a significant majority. Passage of the proposed bill was also endorsed by the House of Delegates at the annual meeting of our Society, an action supporting a previous vote concerning a similar bill formerly introduced. With some physicians in our Society opposition to the measure is a matter of personal conviction and it is noteworthy that at no time during the present controversy was there any evidence on the part of physicians of a lack of respect for such opinion either on the part of those who opposed or those who favored the bill. This may have been a disappointment to some lay individuals who have not yet realized that physicians have been respecting each others opinions for a matter of centuries. It is certain that the next regular convention of our Legislature will see a further attempt to modify the present law, and that in the meantime efforts will be made to create public opinion for and against such change. In any event the solidarity of the physicians of Connecticut will not suffer. We shall continue to respect one anothers opinions in the future as in the past, for among those whose chief purpose in life is the study of their fellow human beings there long has been a considerable knowledge and respect for their processes of thought.

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the *Journal* for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the *Journal* office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511

Dr. Henry Sigerist Honored

A dinner in honor of Henry E. Sigerist, M.D., was held at the Plaza Hotel in New York on May 9, 1947. First among the honors and tokens of recognition, a complete set of the *Index Catalogue* was presented to Dr. Sigerist. This set was of particular interest because it had belonged to Dr. Arnold Carl Klebs, also a native of Switzerland and a great admirer of the *Index Catalogue*, who, at his death, left it with his library to Yale University. After long negotiations the bequest finally arrived in this country, but while the book collection with the famous herbals remains in New Haven, the *Index Catalogue* starts a new odyssey back to Switzerland where, in the villa on the shores of Lake Lugano, it will be used in Dr. Sigerist's projected history of medicine.

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UNITY

No one will dispute the existence of ponderous forces shaping and remolding the practice of medicine as we are living it.

We are exposed every day to the vagaries of the managed-care environment impinging on our practices in a variety of guises; some subtle, some not so subtle. Three of the most obvious influences, certainly for those of us who rely heavily on a hospital setting to express fully our practice, are the hospitals themselves, of course, and then the governmental interests, city, state, and federal, and finally the hordes of entrepreneurial capitalists circling the flock of medical care and service.

I suppose I should hasten to reassure those who know me that I have not overnight become a socialist. No, I continue to espouse our long standing traditions of individual effort and accomplishment as the surest means to achieve our always present goals of the finest medical care for our patients and the most sublime heights of physical and psychological well being for our society.

One of the many things on my mind as I begin this year as president of your society is not that any of these initiatives are necessarily or inherently evil but that much that occurs is disruptive. Our professional press, as well as the lay media, are increasingly providing us the narrative accounts of colossal clashes as our institutions strive to maintain their positions in the mainstream of American medicine or to enhance those positions.

Some time ago, longer I suppose than I like to imagine, I made the fateful decision most of us are presented with to chose a career path directed to clinical endeavors rather than medical research. Over time, it seems to be one of our most fundamental choices. But as the years have passed and my satisfaction with the challenges and rewards of clinical medicine grew, I realized how fortunate we are to live in an area so geographically confined and yet so richly diverse academically. None of us practices more than a few hours travel from an academic center. All of us have personal and professional relationships within both communities. It must be true that these close and personal relationships have enhanced my clinical practice and I hope that these same associations have helped focus our research colleagues as they endeavor to advance our knowledge and understanding.

There is sadly no question that the disruptions to medical practice experienced today are at least matched by the dislocations being experienced in our academic and research institutions.

When economic forces for cost containment dominate discussions determining the availability of health-care delivery then we must all concern ourselves ultimately with the quality of that health care. To change the demographics of our medical graduate population is surely not enough. If our nation's economy cannot support the remarkable, albeit expensive, progress in medical knowledge, the solution, as surely cannot be the singular destruction of any of the pillars supporting the foundation of that knowledge.

Academic tenure in our school systems, colleges, and universities has been a recent topic of discussion across the country. I expect that we are all aware of arguments both for and against that venerable academic institution. No matter your personal preference on the merits of this issue I propose a certain analogy to our situation in medicine. Our effectiveness as practitioners or researchers or administrators depends to some significant extent upon the relationships we build over time between each other, our institutions, and our communities.

Unity and community have never been more important. Members of the family of medicine must continue to reach out to each other realizing that our interests are fundamentally mutual at their heart.

Stanley J. Keating, Jr., M.D.
President

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Connecticut Medical Examining Board
Notice of Hearing

By the authority of Section 4-176 of the Connecticut General Statutes and Section 19a-2a-1 et seg. of the Regulations of Connecticut State Agencies, you are hereby notified that the Connecticut Medical Examining Board (hereinafter "the Board") will hold a hearing for the purpose of issuing a declaratory ruling in response to a petition submitted in November 1996 by Teresa Petricca, President of the American Electrology Association.

The declaratory ruling proceeding will address whether health care providers other than licensed physicians can use lasers for the purpose of hair removal.

The hearing will be held on 19 August 1997, at 2:00 P.M., at the Legislative Office Building, Capitol Avenue, Hartford, Connecticut, in Conference Room 1C. The scheduling of the hearing is subject to change. You are urged to call (860) 509-7648 the day before the hearing to verify this schedule. ***Applications for party or intervenor status must be indicate din writing and submitted to the Board Liaison by 8 August 1997. All testimony and documentary evidence must be written, and submitted to all parties and to the Board with eleven copies by 8 August 1997.*** Any fillings to be submitted to the Board shall be sent to:

Connecticut Medical Examining Board
c/o Kathie J. Pirolo, Board Liaison
Department of public Health, MS #13ADJ
P.O. Box 34038, Hartford, CT 06134-0308

The record in this matter is available between the hours of 8:30 A.M. and 4:30 P.M. Call (860) 609-7648 for an appointment.

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REFLECTIONS ON MEDICINE

Tobacco: The End of the Affair?

ROBERT U. MASSEY, M.D.

IN an English Lit class in high school, we read a series of essays, including many that will be familiar to members of my generation: Charles Lamb's "A Dissertation on Roast Pig," Ralph Waldo Emerson's "Self-Reliance," Mark Twain's "Saint Joan of Arc," William Allen White's "Mary White," Stephen Leacock's "Oxford as I See It," and many others, most of which now would be avoided for their grievous political incorrectness—if fact the whole book is a disgrace: all forty of the authors are dead Euro-American white males. Only the editor was a female.

One especially, I must confess, I recall with pleasure at odd times: Leacock's "Oxford as I See It" (1922). In it he has just declared that in his view, and for obscure reasons, Oxford is without doubt the greatest university in the world.

> I understand that the key to this mystery is found in the operations of the person called the tutor. It is from him, or rather with him, that the students learn all that they know; one and all are agreed on that. Yet it is a little odd to know just how he does it. "We go over to his rooms," said one student, "and he just lights a pipe and talks to us." "We sit round with him," said another, "and he simply smokes and goes over our exercises with us. From this and other evidence I gather that what an Oxford tutor does is to get a little group of students together and smoke at them. Men who have been systematically smoked at for four years turn into ripe scholars.... A well-smoked man speaks and writes English with a grace that can be acquired in no other way.
>
> ... If I were founding a university—and I say it with all the seriousness of which I am capable—I would found first a smoking room....

In the 1930s and '40s most of us were "smoked at" by professors in both medical schools and undergraduate colleges, but only the Rhodes scholars among us at Oxford. One of my favorite authors, C.S. Lewis, was an Oxford tutor; in the photo of him commonly seen his head is wrapped in a cloud of smoke. During the early years at the medical school in Farmington a great gray haze of tobacco smoke formed each morning over the heads of students and lecturers in both the first and second year lecture auditoriums. Only in the last decade or so has the air cleared.

Many years ago during a reception for him, a prominent visiting speaker, an academic physician and biomedical scientist who was also head of a large cancer center, was observed to be smoking unfiltered Camels, one after another. My wife, who knew him fairly well, said, "Dr.——, surely you know that cigarettes cause cancer!"

"Oh, no, June," he answered with a twinkle in his eye, "it's the filters, not the tobacco. Didn't you know?"

He died years later of a cause unrelated to smoking.

The only completely smoke-free places in those olden times were operating and delivery rooms, nurseries, schools, and naves of churches. Yet by 1950 the evidence was accumulating that smoking and lung cancer were very likely related. Annual deaths in England and Wales from lung cancer had risen from 612 in 1925 to 9,287 in 1949-50; only 0.3% were among nonsmokers. We all know the unassailable evidence that has accumulated since, and most of us who once smoked so long ago have given up that pleasurable and companionable habit. We make faces at the lingering smell of tobacco smoke in homes and clothes and cars; we demand smoke-free restaurants, airplanes, hotel rooms, hospitals, and medical schools, No one has smoked in our house for at least 15 years, even though by 1975, when my wife and I finally stopped, we had each smoked for some 35 years. Right now I know no one who smokes where she can be seen; two decades ago I knew few who didn't.

This is progress in a minor way. But recently it has become politically correct to be hysterical about tobacco. The FDA would like to take on nicotine regulation; perhaps alcohol would be next, then eggs, whole milk, and butter, and finally sodium chloride. And grown men and women are suing tobacco companies for the harm presumably caused them by their own fully informed habit of inhaling tobacco smoke. They ought to be suing their

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ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

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parents and the public schools for failing to instill in them the virtues of temperance, prudence, and wisdom, and maybe for over-smoking them when they were infants and children! Or else they should be quite willing, as we all should, to accept the consequences of their own free decisions.

One commentator, clearly never having heard of our amazing experience with prohibition in the 1920s and early 1930s, recommended banning the use of tobacco, phasing it out over 10 years. Government as behavioral counselor and petty moralist has generally seemed inappropriate to me.

The first act of Congress in our history, I am told, was to vote a tax on rum. Why not raise the tax on tobacco until there is a real effect on the market, say, a dollar or two on the pack, and forget the moralizing? It has worked where it has been tried. In the early days of the University of Connecticut Health Center, when the state's political masters were worried about how they could pay for these medical and dental students' education, I suggested to several legislators that they vote a 10 cent increase in the cigarette tax. I estimated that would raise over 35 million dollars a year, more than three times their annual allocation to the Health Center. They smiled and changed the subject.

Nothing is without consequences, and I understand the concerns of the leadership crowd for reelection, for the economic effects of encouraging buyers and their dollars to go out of state. I know they also are concerned for the future health of our children, especially when those children come to be 45 or 50 years old and begin to cough, and the little squamous-cell tumor starts its slow growth in one of their bronchi, or they keel over with a fatal arrhythmia right after lighting their 25th cigarette of the day.

But surely no one can escape having been informed of the risks of smoking tobacco or anything else, sexual promiscuity, alcohol, getting fat, eating globs of high cholesterol food, using too much salt, not wearing seat belts, sailing without life jackets, skiing, diving from high places, and leaving loaded guns in the tie drawer. The fault is not with Philip Morris, Heublein, egg and dairy farmers, and Colt. These may be, to use Aristotelian terms, the producers of the material causes of our discontents; they are not the efficient cause.

We have become a generation of victims, looking for someone or something to blame: not enough money or respect, abusive parents, a lousy neighborhood, genes, free radicals, insufficiently integrated schools, Madison Avenue, or the other political party. We appear to have forgotten notions of restraint, responsibility, and frugality. To be a victim in a society where the only virtue is tolerance for everything but tobacco smoke and *Huckleberry Finn* seems pathetic. But be of good cheer; these little episodes of hysterical behavior are what give color to the routine course of life. They are what make social history so much fun.

Meanwhile we undoubtedly have prevented some premature deaths, but I doubt the 300,000 plus we so confidently claim.

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MEDICAL NEWS CAPSULES

This Month's Reading in Review

TIMOTHY B. NORBECK

Prestige of Professions

The Top	
Doctor	52%
Scientist	51%
Teacher	49%
Minister/Clergy	45%
The Bottom	
Business person	16%
Banker	15%
Journalist	15%
Union Leader	14%

From a 1997 Louis Harris nationwide poll in which adults were asked which professions have great prestige. (*Business Week*, 9 June 1997)

The Massachusetts "ground-breaking and popular" physicians' profile system "may be scrapped" due to insufficient funding.... Officials with the Weld administration said early in June that neither the state House nor the Senate has allocated ample funds to run the program.... It is believed that $247,000 a year is needed to run the program, but only $80,000 was allocated.... "Depending on budget negotiations, the physicians' profile system could be eliminated as early as 1 July or last another four months."

Boston Globe (4 June 1997)

NOTE: This legislation was defeated twice in the recently concluded session of the Connecticut General Assembly.

"The reason that Americans consistently rank HMOs next to last among a list of industries that serve consumers is because of well-publicized events when care has been denied to very sick people who may die. 'It is unacceptable to Americans to hear that care has been denied to anyone who is sick ... just as it is unacceptable to Americans that airplanes can crash.'"

Harvard University pollster Robert Blendon.
Boston Globe (12 June 1997)

Topics that Americans want their doctors to discuss with them.

Diet, weight, fitness	60%
Cancer	60%
Heart or circulatory disease	56%
Stress	55%
Aging	48%

The Public Pulse (August 1996)

Dumb and Dumber: In January, Michael Coulter, 32, was arrested for shoplifting in Cookstown, Ireland, having made off with shoes, socks, and boxer shorts.... Coulter was not difficult to spot during his getaway.... At 7'5", he is reported to be the tallest man in Ireland.... Said one officer: "Everyone knows him, and you can see him coming a mile away."

University Press Syndicate (6 April 1997)

Nearly 90% of congressional staff say that their members' constituents want managed care companies to be held accountable for the medical decisions they make.... Also "60% of Hill staff said patient access to physicians and specialists is the most important managed care issue facing Congress."

From a survey by the Patient Access to
Specialty Care Coalition. (May 1997)

The legislation recently passed in Texas, combined with Connecticut's recent passage of a binding external appeals process, bodes well for sweeping managed care reform in the United States this year.... The Texas bill will allow patients to sue HMOs for malpractice.... ERISA's broad preemption of state law historically has provided a formidable barrier to negligence suits against HMOs.... Although federal and state court decisions are beginning to chip away at the application of ERISA preemption to immunize HMOs (including in Connecticut), the Texas law is the first to specifically provide a cause of action.

Various news sources (June 1997)

Only in America: Employees who have become ill in asbestos-laden workplaces have their own class-action lawsuit, so lawyer Michael V. Kelley filed one in January in Cleveland, Ohio, on behalf of employees in these same workplaces who are perfectly healthy (in case they someday become ill).... Said Kelley, "It's very pro-active."

America Online (22 May 1997)

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TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

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Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

In Response to Dr. Deren's President's Page "Immune from Criticism"

To the Editor: In the March issue of *Connecticut Medicine*, Dr. Michael Deren, our immediate past president of the CSMS, criticized—and rightly so—the fact that some HMOs use board certification as a requirement for physicians for acceptance on their panels.

There are about 8,000 practicing physicians in our state and approximately 20% of them are not board-certified. This means that thousands of patients are at risk of peremptory separation from their physicians and forced to find new ones from the directories provided by their HMOs. What a misundertanding of the doctor-patient relationship and the humanitarian values that have sustained patients and doctors for thousands of years!

The poor judgment shown by some HMOs in this regard means that some 1,600 Connecticut physicians have to suffer not only the shame and humiliation of being singled out in this way; but they have to go to bed at night worried about whether or not they'll be able to make a living when they go to their offices in the morning. This is not an exaggeration when one considers that for Connecticut's physicians a significant portion of their patients are covered by managed-care plans.

From their inception in 1916, the founders of the specialty boards (which now total 24) made it clear that sitting for the boards was entirely a voluntary undertaking. They made it clear that the boards were never to infringe upon physicians' abilities to offer their services to the public. And they also made it clear that the boards were never intended to be used by any hospital or any other health-care organization to discriminate against a physician's ability to take care of patients.

The boards were simply a way for doctors to demonstrate to their peers that they had voluntarily submitted to an examination which tested their knowledge at a level above the minimum required to receive a license from the state. All of this is explained in detail in the four-volume *Directory of the American Board of Medical Specialties* which is in most hospital libraries. Probably, the most important thing that the boards do is to collaborate with medical schools and hospitals to improve their educational programs.

We must make HMOs realize that the boards fail to identify important qualities like honesty and empathy, and persistence, and the ability to work as a team member—all of which are indispensable qualities for physicians to have.

We must also make them understand that a long time ago, hospitals found a way to deal fairly with physicians' credentials when they applied for staff privileges. It is called "delineation of privileges." "Delineation of privileges" looks at a physician's educational background as well as her character—and then makes a decision of her professional abilities. "Delineation of privileges" looks at the totality of a physician's qualifications. It is the fairest way. It is the right way. It is the only way.

As a board-certified physician, I have brought this issue to our local legislators' attention recently at a meeting sponsored by the Fairfield County Medical Association in April; and again at a House of Delegates meeting of the CSMS in May.

The enthusiasm and courage that we bring to this issue will reflect on our ability to protect our colleagues, and to defend our patients as well as our professionalism.

It is important that we send a clear message to those who would control the house of medicine that we can rise above our internal rivalries and turf battles. And that those who based their success on a divided house of medicine in the past will be disappointed in the future.

Edward J. Volpintesta, M.D.
Bethel

Oath of Hippocrates *vs* the *Wall Street Journal*?

To the Editor: Your essay *Reliability, Responsibility, and Trust* was a troubling analysis. The crux of our modern dilemma is expressed in your words "Younger physicians and house officers with whom I've discussed these matters, this decline of medicine into the business ethos of distrust and contract, tell me that it is the antithesis of what they expected when they entered our profession with its traditions of trust, responsibility, and, yes, even mercy." We physicians must be models to the younger physicians who enter our profession. Everything counts. The standard of medical care is not obscure. It is exactly what we would desire if we ourselves become the patients. We would be repelled by the MD who treated us as an economic object. We would not appreciate our desire to see a specialist obstructed by a bureaucratic "No." Since when are "gatekeepers" necessary to achieve medical excellence? Do we want less than excellence for ourselves? Why should we impose the standard of making profits for stockholders, and obscene profits for CEOs, on our patients? No wonder young physicians are disillusioned.

Do we recall what we put down as our reason for entering the profession in our applications to medical school? To recapture the respect our profession deserves we must earn it, earn it through all our actions. Each and every patient is a sacred trust. What sort of applicants should we accept for medical education? Shall we accept only the sons and daughters of the wealthy, those who can afford the outrageous tuitions currently required? What of the sons and daughters of the poor who understand the problems imposed by poverty by virtue of actual experience? Our responsibilities lie in the Oath of Hippocrates, not in the *Wall Street Journal*. Good medicine is based on trust. Trust, like the soul, cannot be restored once it escapes the body.

Charles W. Needham, M.D.
Norwalk

Concerning Dr. Waters' and Dr. Kiernan's "The Abuse of Cardiovascular Procedures"

To the Editor: The article by Waters and Kiernan in the May issue of *Connecticut Medicine (Conn Med* 1997; 61:259-62) is unrealistic. In addition, it would have more support if it were not written by people who could benefit directly by their own recommendations. One of the basic tenets of a cardiology fellowship program is that the cardiologist is trained to do a procedure not as a technician, but as a caring, compassionate, and thoughtful physician helping out the referring physician. I would find it unusual for the highly respected cath team at Hartford Hospital to perform a cateterization on a patient because another physician "ordered it." In addition, one of the fallacies of their recommendations is that it would also be highly unlikely that, in the middle of a catheterization, they would consult a physician who is not involved in the catheterization to find out whether or not they should proceed with an angioplasty procedure.

In addition, it would also be highly unusual to follow their own guidelines and have a second or third physician come in who had "no financial reward" for referring this patient for the procedure. It is still highly debated whether angioplasty should be done as a combined procedure with the original coronary angiogram in a "majority of cases." Certainly, in a number of cases this is a very workable and efficient plan. Their predication that one-third of patients undergoing coronary angiography would benefit from having an angioplasty as part of the procedure is unfounded and may lead to the "occulo-stenotic" reflex of performing angioplasty on a lesion that has no clear ischemic importance. However, if this plan would be efficiently put into use, the third cardiologist that they propose coming into the cath lab to determine whether the angioplasty should be performed may also put a check and a balance to this process.

Instead of this group running an advertising campaign to shut down the diagnostic catheterization labs of the state of Connecticut and shuttle all acute patients to their center for emergency angiography and angioplasty, it would be more efficient and would better serve all of our patients if they actually acted upon this by coming into centers that have diagnostic labs where we could work together to provide all services in an efficient manner.

It is unrealistic to expect that every patient with unstable angina would be transported by helicopter to Hartford Hospital for a diagnostic cath and an angioplasty.

We truly need to work together in this and take into account the needs of our patients rather than marketing strategies for various hospital centers.

Jeffrey Seltzer, M.D., F.A.C.C.
Norwich

In Response to Dr. Seltzer's "Letter to the Editor"

We thank Dr. Seltzer for his interest in our article and appreciate the opportunity to respond to his comments. The four problems that we discussed, overutilization of cardiovascular procedures, the low volume/poor outcome relationship, inefficient delivery, and the increasing complexity of coronary interventions, have been amply documented in the recent medical literature. In fact, the June 1997 issue of *Circulation* contained two articles demonstrating the relationship between low operator volume and poor outcomes for coronary angioplasty more clearly than ever.[1,2]

Our conclusions and recommendations incorporate the guidelines of the American Heart Association/American College of Cardiology and suggestions and recommendations made by others. Implementation of these recommendations would improve patient care. That Texans undergo more cardiovascular procedures than New Yorkers after myocardial infarction, but have a higher adjusted mortality rate[3] is an abuse. That angioplasty operators in the United States perform a median of 26 to 39 cases per year[2]

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when the AHA/ACC guidelines conclude that at least 75 per year are required for the maintenance of quality and safe care,[4] is an abuse, because this pattern of practice results in large numbers of unnecessary procedural complications.[5]

We disagree with several of Dr. Seltzer's statements. Our interventional cardiologists often consult with the patient's clinical cardiologist during coronary angiography to reach a joint decision as to whether to proceed with angioplasty at that time. This circumstance is not "highly unlikely" at all. Patients not only prefer to have the two procedures done together, they often ask if it can be done that way, obtaining informed consent for both beforehand should angioplasty be the best option is easily understood. Several reports in the literature document the safety and efficacy of this approach. In most full-service cardiovascular programs, approximately one third of patients undergoing elective coronary angiography are referred for angioplasty and approximately one third for bypass surgery. All patients treated with primary angioplasty for myocardial infarction and almost all patients with restenosis get a combined procedure already; therefore our estimate that up to one third of angiography patients could benefit from a combined procedure is quite conservative.

We are disappointed that Dr. Seltzer considers our article "unrealistic" and "an advertising campaign." We certainly don't consider it appropriate, as he implies, that every patient with unstable angina be transported by helicopter to our hospital for diagnostic cath and an angioplasty, and never suggested anything like that in our article. But the needs of our patients are not now being met optimally,[5] because of the problems described in our article. Teirstein's editorial comment in *Circulation* last month referred specifically to the problem of low volume operators, but could be applied to all of these issues: *"With so much self-interest opposing real change, it is no wonder physicians have to be dragged, kicking and screaming, to a consensus regarding credentialing requirements. Clearly, the only interest group with something to gain from this controversy is the patients. Fortunately, despite our numerous disagreements and self-interests, I believe that cardiologists ultimately want to deliver the best possible care to their patients."*

David Waters, M.D.
Director of Cardiology
Hartford Hospital and the
University of Connecticut Health Center

Francis Kiernan, M.D.
Director of the Cardiac Catheterization Laboratories
Hartford Hospital and the
University of Connecticut Health Center

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In Response to Dr. Morris Wessel's "Mentors of the Past"

To the Editor: Seeing "Mentors of the Past" by Morris A. Wessel, M.D. (*Conn Med* 61:285–9) reminded me how Morris Wessel was a major mentor in my past.

When I was a first year medical student at Yale (1967 to 1968), New Haven was burning, Vietnam was a daily concern, and making it throught the academic year was a difficult process for me. Morris Wessel befriended me and brought me to his Saturday morning pediatric office on Howard Avenue to "help" him see patients. I did not know how to use a stethoscope then, but that weekly reminder of *why* I was in medical school helped me get through the following week. I was clearly of no help to Morris, but he encouraged this "young doctor" to talk to his patients and to be a part of their care. Morris Wessel was one of my true mentors.

With appreciation.

Frederick L. Cohn, M.D.
Waterbury

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IN MEMORIAM

BREZINA, PHILIP S., Yale University School of Medicine, 1940. Dr. Brezina was chief of surgery at Bristol Hospital for 30 years, retiring in 1980. In 1965, he volunteered his skills as a surgeon at the Albert Schweitzer Hospital in Haiti. Dr. Brezina was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Brezina died 10 June 1997 at the age of 82.

FISCHER, WILLIAM J.H., JR., Columbia University College of Physicians and Surgeons, 1941. Dr. Fischer practiced internal medicine in Providence, Rhode Island until his retirement in 1979. He served as director of medical education at the Rhode Island Hospital and was involved in the development of the Brown University Medical School. Dr. Fischer was a member of the Litchfield County Medical Association and the Connecticut State Medical Society. Dr. Fischer died 26 May 1997 at the age of 83.

GUTTMAN, TIBOR, Fakulta Vseobeckeno Lekarstyi Karlova Universita, Katerinska, Praha, Czechoslovakia, 1939. Dr. Guttman maintained a general practice in Bridgeport for 30 years. He was a past president of the medical staff of Park City Hospital. In addition to the Bridgeport Medical Society, Dr. Guttman was a member of the Fairfield County Medical Association, and the Connecticut State Medical Society. Dr. Guttman died 13 June 1997 at the age of 84.

KAPLAN, BERNARD, J., University of Vermont College of Medicine, 1949. Dr. Kaplan, a proctologist, practiced in Hartford from 1955 until 1986, and in Old Saybrook for the past six years. Dr. Kaplan created and oversaw accreditation for a training program for residents in colon-rectal surgery at St. Francis Hospital which still exists today. In addition to serving actively on numerous regional and national colon and rectal surgeon organizations, Dr. Kaplan was a member of the Hartford County Medical Association, where he served as a delegate to the Connecticut State Medical Society from 1962 until 1971, the Connecticut State Medical Society, where he was a past president of the Society's Section on Proctology and served on the Committee on Medical Economics and Insurance and the Committee on National Legislation for many years, and the American Medical Association. Dr. Kaplan died 17 June 1997 at the age of 79.

LYON, GROVER A., Cornell University Medical College, 1941. Dr. Lyon was a family practitioner in Bridgeport and was associated with St. Vincent's Hospital as well as Bridgeport and Park City Hospitals. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Lyon died in November 1996 at the age of 85.

REITWIESNER, ANDREW G., State University of New York College of Medicine, Brooklyn, 1938. Dr. Reitwiesner practiced medicine in Mt. Vernon and was associated with Mt. Vernon Hospital. He was the surgeon for the Mt. Vernon Fire Department. Subsequent to his retirement in 1966, Dr. Reitwiesner worked at the emergency rooms of St. Francis and Danbury Hospitals. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Reitwiesner died 26 April 1997 at the age of 86.

SHERWOOD, PAUL M., Boston University School of Medicine, 1942. Dr. Sherwood, after 20 years of practice as an internist, changed careers becoming a psychiatrist at the Institute of Living and in private practice in Hartford. He was a member of the Hartford County Medical Association, the Connecticut State Medical Society, where he served on the Committee on Medical Care of Veterans and on the Committee on National Legislation from 1963 until 1966, and the American Medical Association. Dr. Sherwood died 8 June 1997 at the age of 82.

THAYER, RALPH B., JR., Yale University School of Medicine, 1946. Dr. Thayer served as a family physician in the Enfield, Somers, and Stafford areas for many years. He was a former member and president of the medical staff at Johnson Memorial Hospital. Dr. Thayer was a former senior vice president of Blue Cross & Blue Shield of Connecticut. He was a member and past president of the Tolland County Medical Association, the Connecticut State Medical Society where he served on advisory committees during the 1960s. and the American Medical Association. Dr. Thayer died 11 June 1997 at the age of 75.

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AMERICAN MEDICAL ASSOCIATION

IN MEMORIAM

JAMES S. TODD, M.D.

Introduced by Nancy W. Dickey, M.D.
Chair, Board of Trustees

The Board of Trustees presented the following in memoriam for James S. Todd, M.D.

James S. Todd, M.D., surgeon, ethicist, visionary, and former Executive Vice President of the American Medical Association, died Tuesday, 24 June 1997, in New Jersey. He was 65. Doctor Todd successfully directed the AMA through a time of stress and change in the medical profession and did much to position securely the AMA as the leading force of medicine on the eve of the 21st Century.

Doctor Todd, who retired in 1996 after six years as Executive Vice President, passed away just as the AMA House of Delegates, celebrating the organization's 150th anniversary, was meeting in Chicago.

Doctor Todd was elected a member of the Board of Trustees in 1980, became Senior Deputy Executive Vice President in 1985, and was named Executive Vice President in 1990. He was a commissioner to the JCAHO from 1982-85.

Doctor Todd was born in 1931, and graduated cum laude from both Harvard College and Harvard Medical School. He interned and served his residency in surgery at Columbia Presbyterian Medical Center in New York City, becoming chief resident in 1963. He was a Diplomat of the American Board of Surgery and a Fellow of the American College of Surgeons. For many years he was in private practice in northern New Jersey.

Doctor Todd was an ardent spokesperson for the medical profession and a passionate advocate for patients. Through his visionary thinking and eloquent oratory, he elevated the medical profession's esteem of the AMA and established the AMA in the public arena as the national voice of medicine.

At a time when the nation's elected leaders were debating how to reform the country's health care delivery system, Doctor Todd stepped forward as a statesman for medicine who articulated the profession's prescription for the future with common sense and a recognition that the status quo was no longer acceptable.

More than anything else, Doctor Todd loved his profession, though he was fond of saying that trying to organize physicians was akin to "herding cats." He called medicine "the most demanding, rewarding, and enjoyable profession there could possibly be."

James S. Todd, M.D. served American medicine and the AMA with vigor, integrity, compassion, and joy. Though his dynamic leadership will be missed, his energy and spirit are a lasting legacy to all whom he touched. The American Medical Association expresses deep-felt sympathy and condolences to his wife, Pat, and son, Kendall.

June 1997

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

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Earn supplemental income while becoming part of a new medical weight-loss management program. We are seeking physicians to perform medical screenings in our clinics one or more evenings a week. Flexible schedules available. Fax CV to (203) 743-0633 or phone Bill or Sally Gemmill at (203) 744-5032.

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HealthFirst, a growing regional community health center with three sites in eastern Connecticut seeks BC/BE FP/IM to provide full range of preventive and primary care. All sites are fully staffed, computerized and integrated into an organizational network. Competitive salary and benefits. For more information call or send CV to: Recruitment Manager, 112 Lafayette St., Norwich, CT 06360, telephone (860) 885-1308, fax (860) 889-1982.

Currently seeking full-time/part-time (IM/FP) BC/BE physician with focus on women's issues to join a multi-service medical facility providing outpatient preventive medicine and primary care exclusively to women. The medical practice consists of two full-time primary care physicians, a physician's assistant, a nurse practitioner in adult medicine and gynecology, a nutritionist with individual weight-loss and cholesterol reduction programs, and three psychotherapists, ACR accredited mammography, ultrasound, massage therapy, and adjoining laboratory. Women's Care is proud of its comprehensive approach to medical care and health care maintenance and welcomes you to join our team of health care professionals committed to women's issues and education. For more information, contact: Caryn Nesbitt, M.D., Medical Director, 85 Poheganut Dr., Groton, CT 06340, (203) 448-6303.

The Mashantucket Pequot Tribal Nation is seeking to fill the position of Primary Care Physician to provide outpatient/inpatient care at the Mashantucket Pequot Tribal Health Department. Candidates must be BC/BE family physician with a license to practice in the state of Connecticut. Five years active practice and experience with Indian Health Services is preferred. Please send CV to: Human Resources Department, Mashantucket Pequot Tribal Nation, P.O. Box 3199, 1 Matt's Path, Mashantucket, CT 06399-3199. The Mashantucket Pequot Tribal Nation is an AA/EOE, and Native Americans are encouraged to apply.

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INTERNAL MEDICINE

Available July 1997. Licensed in Connecticut. Passed National Boards. American Board certified. M.D. at Tufts University School of Medicine. Internship and residency at the Hospital of St. Raphael. Office based general internist with extensive managed care experience, seeking to join a group or associates practice. Please respond to: Michael F. Collins, M.D., 53 Cotswold Close, Glastonbury, CT 06033, telephone (860) 633-5698.

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PAID CLASSIFIED ADVERTISING

All PAID classified advertising orders, correspondence, and payments should be directed to: CONNECTICUT MEDICINE, Classified Department, 160 St. Ronan Street, New Haven, CT 06511, Tel. (203) 865-0587. The Classified rates are as follows: $60.00 for 25 words or less; plus $1.00 each additional word. For confidential answers, the cost is $3.00 per insertion, sent in care of CONNECTICUT MEDICINE. Ad copy must be typewritten, double spaced, with payment, and delivered no later than the first day of the month preceding the month of issue.

Physically Challenged Golf Association

The Physically Challenged Golf Association was established in 1995 with the mission to promote the game of golf to the physically challenged (ie, those afflicted by stroke, amputation, total joint replacement, neck or back surgery, musculo-skeletal diseases, etc.) The association recently received nonprofit status and has been endorsed by the Connecticut State Medical Society—Sports Medicine, Connecticut PGA, and the National Amputee Golf Association. With the help of the Connecticut PGA several clinics are being conducted. Help is needed at any of the clinics. Please call Kathleen Hickey Kane, MS., PT., ATC, for more information at the Connecticut Chapter of the Physically Challenged Golf Association at (860) 828-6446 or write P.O. Box 27, East Berlin, Connecticut.

Clinton Country Club
Clinton, Connecticut
Golf clinic: 2 August 1997—3-6 p.m.

Racebrook Country Club
Orange, Connecticut
Nine holes/golf clinic: 4 October 1997—2:30 p.m.

The VIth International Symposium
on
Sjögren's Syndrome
will be hosted by
The University of Connecticut Health Center
15 – 18 October 1997
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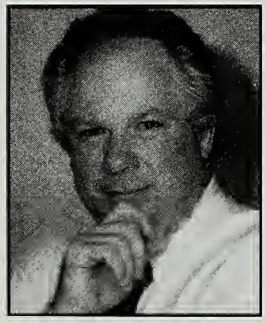

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Hyperkalemia and Trimethoprim-Sulfamethoxazole: A New Problem Emerges 25 Years Later

MARK A. PERAZELLA, M.D.

ABSTRACT—Trimethoprim-sulfamethoxazole is a frequently prescribed antibiotic with a wide spectrum of antimicrobial activity. A previously unreported and potentially lethal adverse reaction associated with "high dose" trimethoprim-sulfamethoxazole therapy, hyperkalemia, was described. Subsequent to the descriptions of hyperkalemia with "high dose" trimethoprim-sulfamethoxazole, a handful of cases noted the development of hyperkalemia with "standard dose" trimethoprim-sulfamethoxazole in elderly patients without evidence of an obvious defect in potassium homeostasis. A surveillance study of patients treated with "standard dose" trimethoprim-sulfamethoxazole as compared to similar controls treated with other antibiotics confirmed the rise in potassium associated with trimethoprim-sulfamethoxazole therapy. Recognition of this potassium disorder led to investigation and description of the mechanism by which trimethoprim-sulfamethoxazole-induced hyperkalemia. Trimethoprim was found to act like the potassium-sparing diuretic amiloride and reduce renal potassium excretion. Hence, trimethoprim-sulfamethoxazole therapy was found to be associated with a new adverse reaction, hyperkalemia, nearly 25 years after its introduction into clinical practice as an antimicrobial agent.

Introduction

TRIMETHOPRIM-SULFAMETHOXAZOLE has been used extensively as treatment for a variety of infections since its introduction into clinical practice in 1968.[1,2] This medication, which is a combination antimicrobial agent with a wide range of bacteriostatic activity, prevents bacterial cell growth through interruption of nucleic acid synthesis.[1,2,3] Trimethoprim inhibits the dihydrofolic acid reductase of bacteria 10,000 times more efficiently than the same enzyme of mammalian cells.[3] Sulfamethoxazole, a structural analog of *p*-aminobenzoic acid (PABA), inhibits the enzyme dihydropteroate synthetase. The combination of trimethoprim and sulfamethoxazole, through sequential inhibition of two sites in the enzyme pathway in nucleic acid synthesis, acts synergistically to prevent microbial cell growth and is an effective antimicrobial agent.[3] Both drugs are well absorbed (100%) with oral administration and are moderately protein bound (65% to70%).[3] Trimethoprim reaches high urinary concentration with 50% to 60% of the drug excreted by the kidney within 24 hours, while sulfamethoxazole and its metabolites are excreted in the urine (30%) to a slightly lesser degree.[3]

Adverse reactions to trimethoprim-sulfamethoxazole have been documented in large drug surveillance studies.[1,2,4] Many of the adverse reactions associated with trimethoprim-sulfamethoxazole are related to the sulfonamide component of the antibiotic combination. The most common side effects reported include gastrointestinal upset, skin lesions, and hematologic disorders.[1,2] However, untoward renal reactions to trimethoprim-sulfamethoxazole have been considered relatively rare. Of 649 recipients of trimethoprim-sulfamethoxazole surveyed in the 1978 report of Lawson and Jick, there were no

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episodes of acute renal insufficiency and only one instance of renal tubular acidosis. Electrolyte disturbances were not reported in any of these large surveillance studies.[1,2,4] In other reports, allergic interstitial nephritis and a crystal-associated nephropathy have been noted.[4,5,6] Both of these entities can result in true renal insufficiency and have been attributed to the sulfonamide drug.[4,5,6] Serum creatinine elevation in the absence of a true decrease in glomerular filtration rate (GFR) has also been noted in patients treated with trimethoprim-sulfamethoxazole.[2,7] This results from trimethoprim's action to inhibit competitively the tubular secretion of creatinine.[2,7]

Clinical Observations

Twenty-five years after the introduction of trimethoprim-sulfamethoxazole into clinical practice in 1968, a previously unknown and potentially life-threatening problem, hyperkalemia, came to attention.[8-11] In 1983, the initial description of hyperkalemia associated with high-dose trimethoprim-sulfamethoxazole treatment was provided by Kaufman and his coworkers; however, this observation remained obscure.[12] These clinicians provided observations on a patient with leukemia and *Pneumocystis carinii* pneumonia who developed severe hyperkalemia, metabolic acidosis, hyponatremia, and renal salt wasting during high-dose oral trimethoprim-sulfamethoxazole therapy (trimethoprim 160 mg and sulfamethoxazole 800 mg every six hours). Urine sediment examination was unremarkable and serum cortisol and aldosterone levels were normal. Discontinuation of this medication and adminstration of normal saline promptly corrected these abnormalities. Upon rechallenge with trimethoprim-sulfamethoxazole several weeks later, hyperkalemia recurred (serum potassium 7 mmol/L) and once again resolved with discontinuation of the drug and administration of normal saline. The authors speculated that trimethoprim-sulfamethoxazole had inhibited renal potassium excretion either by antagonizing the actions of aldosterone on tubular function (aldosterone resistance) or by a direct effect on the distal nephron.

In 1990, Medina and colleagues, in a drug efficacy trial, reported hyperkalemia as an adverse reaction in 60 patients with the acquired immunodeficiency syndrome treated orally with either trimethoprim-sulfamethoxazole (20 mg/kg/day and 100 mg/kg/day, respectively) or trimethoprim-dapsone (20 mg/kg/day and 100 mg/kg/day, respectively) for *Pneumocystis carinii* pneumonia.[13] Hyperkalemia developed in 53% of the patients receiving trimethoprim-dapsone and 20% of those receiving trimethoprim-sulfamethoxazole. The highest serum potassium concentration was 6.1 mmol/L and no patient exhibited untoward reactions related to hyperkalemia. The authors offered no explanation for this electrolyte disturbance and hyperkalemia as an adverse reaction of trimethoprim-sulfamethoxazole remained essentially unknown.

Velázquez and colleagues in 1993 provided observations on 30 consecutive hospitalized HIV-infected patients with documented or suspected *Pneumocystis carinii* pneumonia treated with high dose trimethoprim-sulfamethoxazole or trimethoprim-dapsone.[3] They noted that 27 of the 30 patients exhibited a rise in serum potassium concentration (Fig. 1). Fifty percent (15/30) of the patients developed a peak serum potassium concentration greater than 5 mmol/L, while 10% reached a potassium concentration greater than 6 mmol/L. More detailed studies were performed in seven patients who developed a mean serum potassium of 5.9 ± 0.9 mmol/L (±SD). In these patients, urinary potassium concentrations averaged 11.3 ± 5.8 mmol/L (±SD), urinary sodium averaged 103 ± 65 mmol/L (±SD), and the transtubular potassium concentration gradients (TTKG) averaged 1.9 ± 1.1 (±SD). Discontinuation of trimethoprim-sulfamethoxazole in three patients revealed normalization of their TTKG, which is an indirect measure of net potassium secretion in the cortical collecting tubule. Renal function was within normal limits and showed no significant change from baseline

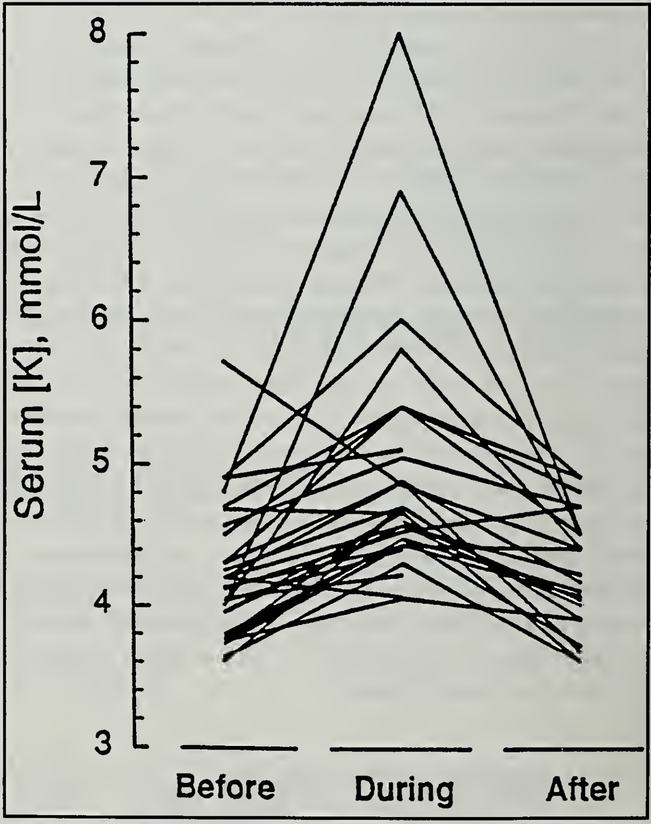

Figure 1.—Effect of trimethoprim (before, during, after) on serum potassium concentration in patients with AIDS. Mean values for all patients ± SE for each period are 4.2 ± 0.09mmol/L, 4.8 ± 0.14mmol/L, and 4.3 ± 0.09mmol/L. (From Velazquez et al[8] with permission.)

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during antibiotic therapy. Furthermore, serum cortisol, plasma renin activity, and plasma aldosterone levels were either normal or high during hyperkalemia, eliminating these factors as the major cause of hyperkalemia. This information suggested that trimethoprim-sulfamethoxazole was associated with hyperkalemia, and this cation disturbance appeared to occur from a decrease in renal potassium excretion.

Choi and coworkers also observed the development of severe hyperkalemia in an AIDS patient treated with high-dose intravenous trimethoprim-sulfamethoxazole.[9] At baseline, the serum potassium concentration was 4.6 mmol/L and the serum creatinine was 2.4 mg/dL. Treatment with trimethoprim-sulfamethoxazole (1.9 gm/day trimethoprim and 9.6 gm/day sulfamethoxazole) over the first five days was associated with a rise in serum potassium concentration to 5.5 mmol/L. At the time of hyperkalemia, urinary potassium and sodium concentrations were 5 mmol/L and 52 mmol/L, respectively. After nine days of therapy, the serum potassium concentration was 7.9 mmol/L, the serum creatinine was 3.1 mg/dL, and the calculated TTKG was inappropriately low at 1.9. These data strongly suggested impairment of renal tubular potassium secretion by trimethoprim-sulfamethoxazole. Serum cortisol, plasma renin activity and aldosterone concentrations were normal, and administration of 0.3 mg per day of fludrocortisone acetate failed to raise the urinary potassium concentration or increase the TTKG. However, discontinuation of trimethoprim-sulfamethoxazole was associated with normalization of the serum potassium concentration. In addition, several days after discharge, the patient's serum potassium concentration was 4.5 mmol/L, and the TTKG was 8.9, indicating normalization of renal tubular potassium secretion in the absence of trimethoprim-sulfamethoxazole.

More data on the association of hyperkalemia with trimethoprim-sulfamethoxazole was provided by Greenberg et al.[10] These investigators conducted a retrospective review of all human immunodeficiency virus-infected (HIV) patients at their institution between 1989 and 1991 who were treated (orally or intravenously) for more than six days with trimethoprim (20 mg/kg/day)-sulfamethoxazole (100 mg/kg/day). Patients were excluded if they received potassium supplementation, were treated with a medication known to alter potassium homeostasis, possessed a serum creatinine greater than 2.1 mg/dL, or exhibited vomiting or diarrhea. Nineteen of 25 patients (76%) who met the study criteria and received

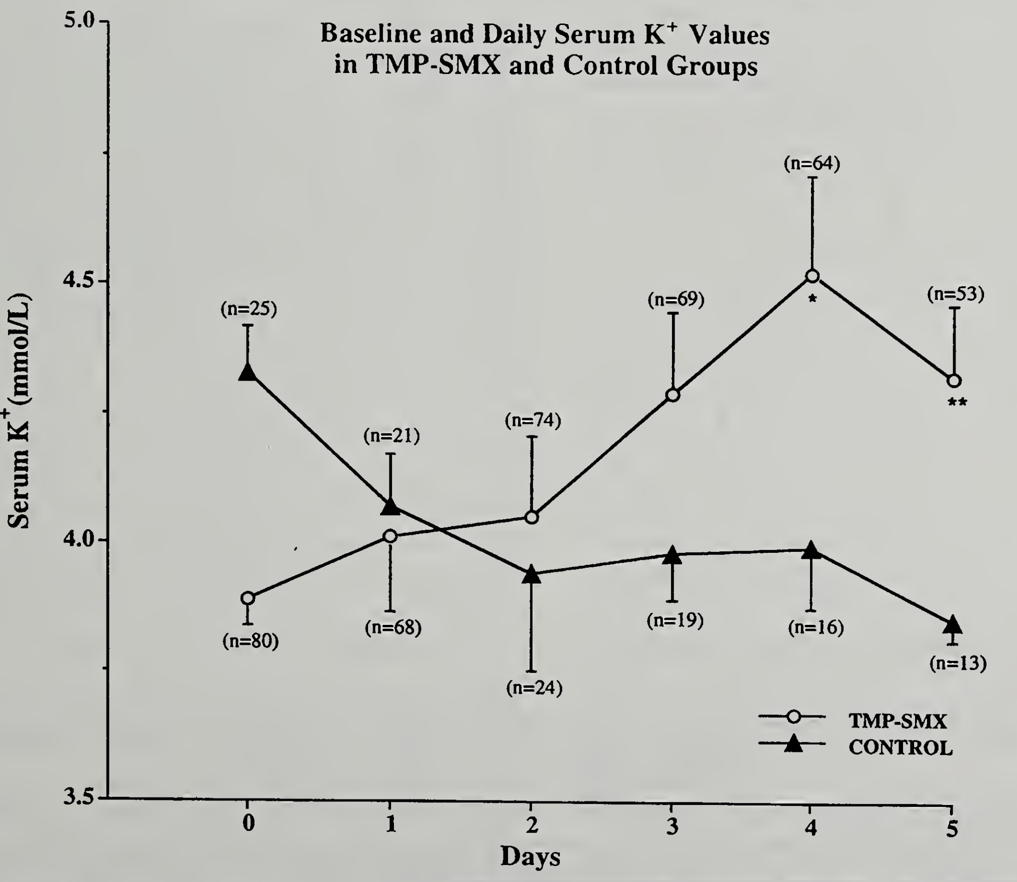

Figure 2.—Baseline and peak serum potassium in the Tmp-Smx and control group are shown during five days of treatment. A statistically significant rise in serum potassium occurred in the Tmp-Smx group. Values are expressed as mean ±SE. Abbreviations: n, number of patients; K^+, potassium; *P<0.01; **P<0.05. (From Alappan et al[2] with permission.)

high-dose trimethoprim-sulfamethoxazole exhibited an increase in serum potassium concentration of 1 mmol/L or greater from their baseline. Seven patients (28%) developed a serum potassium concentration greater than 5.5 mmol/L, and 12% (3/19) exceeded 6 mmol/L. Normalization of serum potassium concentration occurred following discontinuation of the drug. Twenty-six hospitalized patients with HIV infection who did not receive trimethoprim-sulfamethoxazole served as the control group. None of these patients exhibited a rise in serum potassium concentration during the study period. This study confirmed the previous observations that trimethoprim-sulfamethoxazole was associated with the development of hyperkalemia when used in high dose to treat patients infected with HIV.

As a result of these descriptions of hyperkalemia in HIV-infected patients treated with high dose trimethoprim-sulfamethoxazole, astute clinicians began to observe the development of hyperkalemia in non HIV-infected patients treated with trimethoprim-sulfamethoxazole.[14-18] Furthermore, reports of hyperkalemia in association with "standard dose" trimethoprim-sulfamethoxazole therapy also emerged.[14-18] In 1993 Funai and colleagues described two patients who first developed hyperkalemia with "high dose" trimethoprim-sulfamethoxazole that resolved upon discontinuation of therapy. Reintroduction of trimethoprim-sulfamethoxazole at a lower dose (320 mg per day) was again associated with a rise in serum potassium concentration.[14] It is of note that both patients were elderly and had underlying renal insufficiency. This information suggested that trimethoprim-sulfamethoxazole could cause hyperkalemia when administered in "standard dose" to high-risk patients (renal insufficiency, old age). Three single case reports published as letters to the editor in 1994 also described the association of hyperkalemia with "standard dose" trimethoprim-sulfamethoxazole therapy.[15-17] All of these patients were elderly (>70 years old) and were receiving trimethoprim (360mg/day) -sulfamethoxazole (1600 mg/day) for a variety of infections.[15-17] Hyperkalemia developed in all three patients within three to seven days of drug therapy. In two of the patients, the serum potassium concentration increased significantly to 6 mmol/L. No other explanation for hyperkalemia was apparent and none of the patients exhibited volume depletion, an active urine sediment, or an obvious defect in

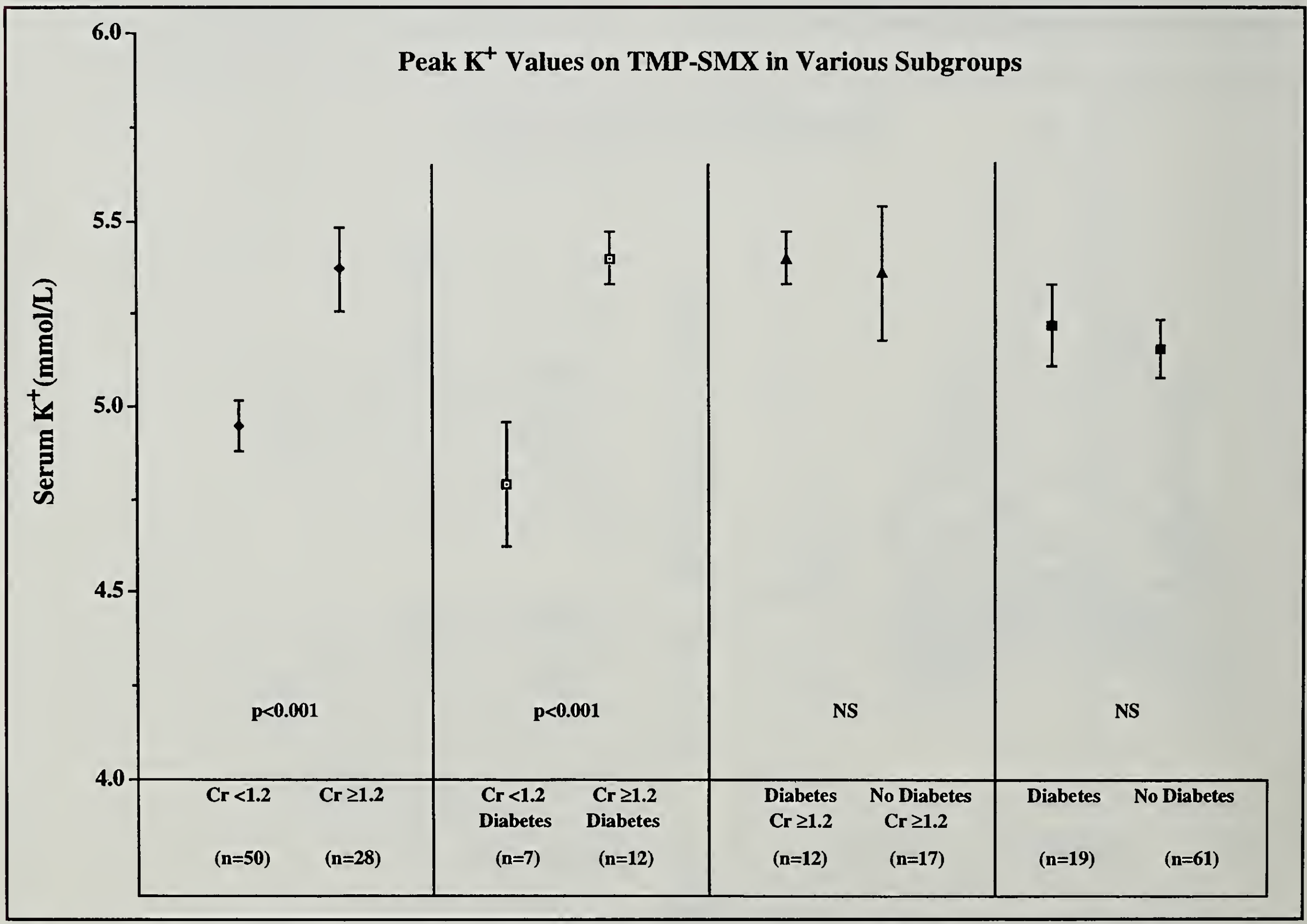

Figure 3.—Peak serum potassium concentrations (mean ± SE) in the various subgroups of patients treated with trimethoprim-sulfamethoxazole. A statistically significant peak potassium concentration was seen only in patients with a baseline serum creatinine level of 1.2 mg/dl (106 mmol) or more, regardless of the presence or absence of diabetes mellitus. Cr, creatinine; K^+, potassium; n, number of patients. (From Alappan et al[20] with permission.)

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potassium homeostasis. Furthermore, none of the patients had obvious renal insufficiency (serum creatinine levels $\leq$ 1.1 mg/dL), although the calculated creatinine clearance in one patient was 32 mL/minute. As in previous cases, discontinuation of the drug resulted in resolution of hyperkalemia and rechallenge with trimethoprim-sulfamethoxazole in one patient resulted in a recurrence of hyperkalemia. In yet another case, trimethoprim (200 mg twice daily) administration in the absence of sulfamethoxazole was associated with the development of severe hyperkalemia (7 mmol/L) and a mild metabolic acidosis in a patient reported by Smith and Cohen.[18] The rise in serum potassium concentration was observed after four days of therapy for a urinary tract infection.[18] However, the effect of trimethoprim on the development of hyperkalemia was confounded by concurrent treatment with diclofenac, underlying mild renal insufficiency, and possible coexisting pyelonephritis. Hyperkalemia was also described in a patient treated with intravenous trimethoprim sulfamethoxazole for a soft tissue infection, in spite of a normal urinalysis, stable serum creatinine (0.9 mg/dL), and the absence of other risk facors for hyperkalemia.[19] As with previous reports, hyperkalemia resolved upon discontinuation of trimethoprim-sulfamethoxazole.

A surveillance study was subsequently undertaken to evaluate the effect of "standard dose" trimethoprim-sulfamethoxazole on serum potassium concentration in hospitalized patients.[20] Over a 14-month period, 80 hospitalized patients who received trimethoprim-sulfamethoxazole at standard dose (trimethoprim $\leq$ 360mg, sulfamethoxazole $\leq$ 1600mg) for at least five days were compared to 25 similar control patients treated with other antibiotics for a minimum of five days. The two groups were matched with respect to age, sex, comorbid illness, treatment with a potassium-altering medication, and baseline laboratory data. The group receiving trimethoprim-sulfamethoxazole manifested a 1.21 mmol/L increase in serum potassium and reached a peak of 5.1 ± 0.5 mmol/L (±SD). The mean potassium concentration in the treatment group increased after trimethoprim-sulfamethoxazole therapy was initiated, and a statistically significant difference in the mean potassium concentration in the treatment group and the control group was noted on days four and five of therapy (Fig. 2). Patients with a serum creatinine $\geq$ 1.2 mg/dl developed a higher peak potassium concentration [potassium= 5.37 ± 0.59 mmol/L] as compared to patients with a serum creatinine $<$ 1.2 mg/dl [potassium = 4.95 ± 0.48 mmol/L] (Fig. 3). Diabetes and old age were not statistically significant risk factors for the development of more severe hyperkalemia, although both were associated with a higher peak potassium concentration. Serum potassium increased to values greater than 5 mmol/L in 62.5% of patients and greater than 5.5 mmol/L in 21.2% of the patients. These data suggested that "standard dose" trimethoprim-sulfamethoxazole causes hyperkalemia after four to five days of therapy in a significant percentage of hospitalized patients. It appeared that concurrent renal insufficiency, even if only of moderate severity, is an important risk factor for this occurrence.

More recently, Safrin and colleagues studied the efficacy of three oral antibiotic regimens, administered at a lower than usual dose, in the treatment of *Pneumocystis carinii* pneumonia in AIDS patients.[21] The drug regimens evaluated were trimethoprim-sulfamethoxazole, dapsone-trimethoprim, and clindamycin-primaquine. The occurrence of hyperkalemia was surprisingly low, as only one patient in the study was noted to have developed this adverse reaction. However, in response to a letter to the editor requesting more data concerning the issue of hyperkalemia, the authors reported a statistically different (P=0.02) and a more frequent occurrence of hyperkalemia in patients treated with the trimethoprim-containing medications compared to those treated with clindamycin-primaquine.[22,23] Specifically, 13 of 64 patients (20.3%) treated with trimethoprim-sulfamethoxazole and 10.3% (6/58) of patients treated with dapsone-trimethoprim developed a serum potassium greater than 5.6 mmol/L while only 3.5% (2/57) of patients treated with clindamycin-primaquine developed a serum potassium greater than 5.6 mmol/L.[23] These findings further confirmed the association of hyperkalemia with trimethoprim-sulfamethoxazole therapy.

Laboratory Studies

Investigations in the laboratory have provided insight into the mechanism by which trimethoprim-sulfamethoxazole causes hyperkalemia. Choi and colleagues used the A6-cell line cultured from the toad distal nephron, a model of distal nephron tubular cells (principal cells), to search for any direct effect of trimethoprim on sodium or potassium transport.[9] Trimethoprim, which is structurally similar to amiloride, was shown to rapidly and reversibly inhibit amiloride-sensitive sodium transport. A concentration of 10^{-3} M inhibited the amiloride-sensitive short-circuit current by a mean of 83% while fifty percent inhibition was achieved with a trimethoprim concentration of 1.2×10^{-4} M. The addition of sulfamethoxazole or its principal metabolite, *N*-acetylsulfamethoxazole, did not inhibit short-circuit current. In contrast, amphotericin B, which forms amiloride insensitive ion channels, allowed sodium to enter cells when it was added to the luminal bath in the presence of trimethoprim. Taken together, these observations suggested a specific inhibitory effect of trimethoprim but not sulfamethoxazole on sodium channel transport in A6 cells. Inhibition of distal nephron epithelial sodium channels by trimethoprim is akin to the action of amiloride to inhibit sodium channels and function as a potassium sparing diuretic.[9] Hence, trimethoprim may cause hyperkalemia through this mechanism.

Similarly, Velázquez and colleagues studied distal nephron sodium and potassium transport in intact rats as well as in microperfusion experiments.[8] In the intact rat studies, trimethoprim (9.6 mg/hr/kg body weight) infused intravenously decreased urinary potassium excretion by 40% and increased urinary sodium excretion by 46% in the absence of a change in urinary flow rate or chloride excretion rate. Microperfusion of rat distal tubules with trimethoprim was associated with a dose-dependent decrease in the transepithelial voltage. Maximal reduction of distal tubule transepithelial voltage occurred at a luminal trimethoprim concentration of 1.0 mmol/L while a 10-fold lower concentration (0.1 mmol/L) inhibited the transepithelial voltage by 25% (Fig. 4). Hence, the presence of both decreased urinary potassium secretion and depolarization of the transepithelial voltage during luminal perfusion of trimethoprim indicates that trimethoprim blocks sodium channels in the luminal membrane of the mammalian distal tubule in a manner similar to amiloride and causes hyperkalemia through this amiloride-like action. Importantly, the drug concentrations employed in the investigations of Choi and Velázquez are achieved in a similar concentration in the urine of humans treated with trimethoprim-sulfamethoxazole and are relevant to clinical practice.[8,9] For example, patients administered 320 mg per day of trimethoprim orally in divided doses reach urinary concentrations of approximately 2 x 10^{-4} M.[23] Additionally, a single 200 mg oral dose of trimethoprim will attain a urinary concentration of approximately 1.1 mmol/L.[8] These concentrations are well within the concentration ranges that inhibit sodium channel transport and blunt renal potassium excretion, and likely explain the hyperkalemia associated with both "high" and "standard dose" trimethoprim therapy.[8,9]

Additional evidence to support this mechanism was provided by Reiser and colleagues.[25] These investigators performed in-vivo clearance studies in anesthetized dogs to investigate the effect of intrarenal trimethoprim infusion (0.2 mg/kg/min) on renal blood flow, glomerular fitration rate, urine volume, and renal sodium and potassium excretion.[25] Infusion of trimethoprim in these dogs was performed in various combinations. In one group of dogs, trimethoprim was infused into the left kidney following intravenous amiloride (5 mg) administration. The

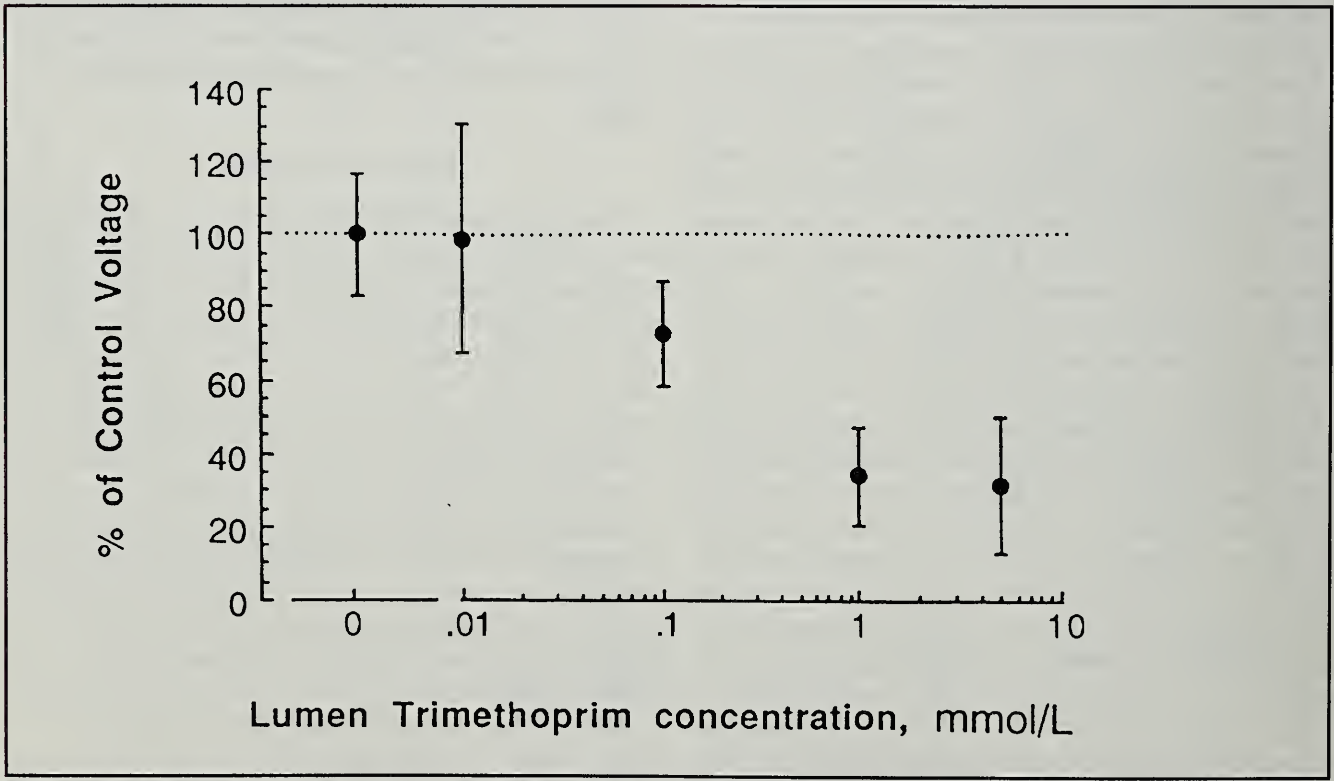

Figure 4.—Dose-response curve for trimethoprim effect on transepithelial voltage in the rat distal tubule. Values are means and CIs. The effect of each dose of trimethoprim on the distal tubule voltage is plotted as percentage change compared with its own control voltage. The maximum effect of luminal trimethoprim was reached at approximately 1 mmol/L. (From Velazquez et al[8] with permission.)

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diuresis, natriuresis, and antikaliuresis induced by amiloride were not altered further by trimethoprim infusion in the left kidney. In two other groups of dogs, trimethoprim infusion into one kidney was associated with an ipsilateral diuresis, natriuresis and antikaliuresis without affecting the contralateral kidney. One group of dogs underwent intravenous furosemide infusion (20 mg) during intrarenal trimethoprim infusion while the other group underwent acute intravenous saline loading (2ml/min/kg) during intrarenal trimethoprim infusion. Both furosemide and saline loading reversed the antikaliuretic effect of trimethoprim in the ipsilateral kidney, despite continued intrarenal trimethoprim infusion.[25] These results confirmed that trimethoprim reduces renal potassium excretion through its action to block sodium channels in the distal nephron in a manner identical to amiloride. Furthermore, their work suggested that an increased delivery of sodium and volume to the distal nephron may abrogate the antikaliuretic effect of trimethoprim and provide potential therapeutic interventions to overcome the problem of hyperkalemia in patients who require this antibiotic.

Schreiber and coworkers confirmed previous findings on trimethoprim and provided further insight into the mechanism of trimethoprim-associated hyperkalemia by studying the effect of pH on trimethoprim.[26] They hypothesized that trimethoprim, like amiloride, is a weak base (pKa=7.24) which blocks epithelial sodium channels more fully when protonated (cationic form). They speculated that an increase in urine pH above 7 would substantially decrease the protonated (cationic) form of trimethoprim and blunt trimethoprim's ability to block sodium channel activity. The effect of pH on trimethoprim was examined in A6 cells and in intact rats, respectively. In A6 cells, at a pH of 8.2, more trimethoprim (340 μM) was required to inhibit the amiloride short circuit current by 50% than the amount (50 μM) required at a pH of 6.3. In intact rats, alkalinization of the urine with acetazolamide in rats infused with trimethoprim reversed the antikaliuretic effect of trimethoprim and increased the TTKG compared to rats infused with trimethoprim alone.[26] These data forced the conclusion that trimethoprim induces antikaliuresis through the blockade of sodium channel activity in the distal nephron, and the protonated (cationic) form of this drug more effectively interferes with sodium channels. These results also suggested that alkalinization of the urine blunts the effect of trimethoprim on renal potassium excretion and may provide a useful intervention in patients who develop hyperkalemia with trimethoprim therapy but require continued treatment with this drug.

An additional mechanism to explain trimethoprim's effect on renal potassium excretion was proposed by Eiam-Ong et al.[27] They performed both in vivo experiments in rats and in vitro investigations using micropuncture technique to test the effect of acute (90 minutes) and chronic (14 days) trimethoprim infusion on potassium homeostasis and on renal ATPase activity, respectively. This group found that acute trimethoprim infusion was associated with a decrease in urinary potassium excretion without hyperkalemia as well as a fall in Na-K-ATPase activity in the proximal tubule and collecting duct.[26] On the other hand, chronic trimethoprim infusion resulted in hyperkalemia, decreased urinary potassium excretion, and a more pronounced decline in Na-K-ATPase activity in the cortical collecting tubule as compared to the proximal tubule. Trimethoprim had no effect on the other renal ATPases (H-K-ATPase or H-ATPase). The investigators concluded that trimethoprim is in fact "amiloride", and like amiloride, inhibits both apical sodium channel activity and basolateral Na-K-ATPase function, resulting in reduced renal potassium excretion and hyperkalemia.

Conclusion

It is clear that hyperkalemia is a well-established complication of both "high" and "standard dose" trimethoprim-sulfamethoxazole therapy. The case reports, small series of patients, and surveillance study suggest that an increase in serum potassium concentration occurs commonly, and serious and life-threatening hyperkalemia can occur in a significant number of patients. That hyperkalemia was not observed by Lawson or Jick from their adverse reaction surveillance studies of trimethoprim-sulfamethoxazole therapy is perplexing.[1,2,4] Perhaps the characteristics of the respective study populations are relevant. It is conceivable that the patients studied by Lawson and Jick may have been a younger and healthier group of patients as compared to the patients in the more recent studies. To be specific, 22.6% of the patients reported by Lawson and Jick were less than 50 years old and 63.3% were less than 70 years old.[1] In contrast, the patients studied by Alappan, Perazella, and Buller had a mean age of 72 ± 16 years.[19] Perhaps mild renal insufficiency, often present but unsuspected in elderly patients, predisposed this group of patients treated with trimethoprim-sulfamethoxazole to the development of hyperkalemia as compared to the relatively younger group of patients studied in the collaborative trials.[28] Furthermore, there are data to suggest that elderly patients have a lower basal plasma aldosterone level as well as a blunted aldosterone response to posture, sodium depletion and hyperkalemia.[29] This relative hypoaldosteronism associated with advanced age may contribute importantly to an increased susceptibility to hyperkalemia and potentially explain the findings in the older patients. HIV-infected patients may also have an inherant impairment in renal potassium excretion from adrenal hormone deficiency, tubulointerstitial disease, or renal insufficiency, and this may increase risk for the development of hyperkalemia.[30,31] Regardless of these differences, it appears that both "high dose" and "standard dose" trimethoprim-sulfamethoxazole therapy may be complicated by varying degrees of hyperkalemia, on the basis of the "amiloride-like" effect of trimethoprim on the distal nephron. Patients with renal insufficiency and other disturbances in potassium homeostasis should be monitored closely when treated with this medication.

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Venous Obstruction of the Lower Extremity Secondary to an Enlarged Bladder

CHITTOOR B. SAI SUDHAKAR, M.D., MAZIN AL-HAKEEM, M.D.,
AND BAUER E. SUMPIO, M.D.

VENOUS obstruction of the lower extremity presents with oedema of the extremity. We present an unusual case of unilateral obstruction of the venous drainage of the lower extremity secondary to an enlarged bladder.

Case Report

A 69-year-old male with a past history of seizures, hypertension, alcohol abuse, Paget's disease of the bone, subdural hemorrhage, and atrial fibrillation presented with a two-day history of painless swelling of the left lower limb. He had a generalized swelling of the left lower limb, absence of groin lymphadenopathy, and a distended bladder up to the umbilicus. Doppler study demonstrated an absence of flow and minimal response to Valsalva maneuver in the left common femoral vein without deep venous thrombosis (Fig. A). Two liters of urine were drained from the urinary bladder. A repeat of the Doppler study demonstrated a normal flow in the left common femoral vein with a pronounced response to Valsalva maneuver (Fig. B). One week later he underwent a transurethral prostatic resection with bilateral orchiectomy for prostatic cancer.

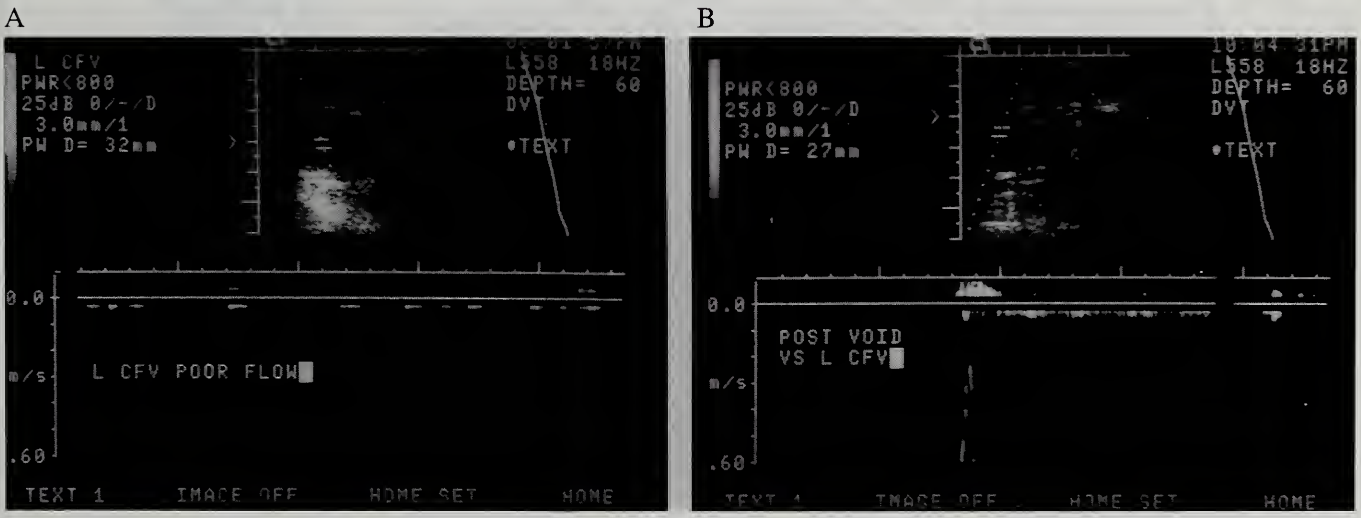

Figure .—Doppler study demonstrates absence of flow (A) and return of flow (B) in the left common femoral vein following catheterization of the urinary bladder.

Comment

In our patient the enlarged urinary bladder obstructed the venous drainage from the left lower extremity proximal to the common femoral vein, presumably the left iliac veins. This is supported by the sonographic appearance of

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the common femoral vein before and after bladder catheterization. Obstruction of the iliac veins could be secondary to extrinsic (neoplasia, retroperitoneal fibrosis) or intrinsic lesions (thrombus). While obstruction of the inferior vena cava by a distended urinary bladder has been reported (Marcus and O'Brein, 1989, Morris and Fradd, 1992) we have been unable to find reports of an enlarged urinary bladder causing unilateral venous obstruction of the iliac veins.

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Abstracts of Papers: Fifth Annual Pediatric Resident and Fellow Research Day

Tuesday, 4 June 1996

Hartford Hospital, Conklin Building Auditorium

Edwin L. Zalneraitis, M.D.
Director, Pediatric Residency Program and Assistant Dean for Education,
Department of Pediatrics, University of Connecticut School of Medicine

ABSTRACT: Presentations for the Fifth Annual Pediatric Resident and Fellow Research Day, 4 June 1996, were delivered in the Conklin Building Auditorium at Hartford Hospital. They reflected the diligence and talent of the residents and fellows and the time and resources provided by faculty sponsors. It is truly noteworthy, in a time when increased pressures on faculty time are omnipresent, that our faculty still makes the time available to pursue and develop the investigational talents of our trainees.

This year's participants addressed another remarkably broad range of problems in medical science, public health, and education. Dr. Vineet Bhandari presented results from efforts in both clinical and laboratory investigation. In collaboration with his mentor, Dr. Ted Rosenkrantz, he examined the phenomenon of pulmonary hemorrhage in the neonate. Working in the laboratory with Dr. Mitchell Kresch, he examined the increase in antioxidant activity in type II pneumocytes exposed to hyperoxia. Dr. Vasantha Kumar also worked with Dr. Ted Rosenkrantz to evaluate the clinical value of magnesium as neuroprotective for the fetus. Dr. Krenek's interest in public health led her to the evaluation of bicycle safety education in Connecticut schools under the guidance of Dr. Robert Zavoski. Finally, Dr. Peg O'Neill worked with me to survey the ways in which pediatric residency programs in the northeast teach advocacy to residents.

This year's program also recognized Dr. Susmita Pati, the 1996 Linda Ives Award winner, for research as a medical student in the discipline of pediatrics . Dr. Pati, working with Dr. Patricia Joyce and Ms. Judy Lewis, examined levels of food security in Puerto Rican children living in Hartford and Puerto Rico.

The Department of Pediatrics proudly recognizes the efforts of residents and fellows to derive new knowledge from the laboratory, the bedside, the classroom, and the community. Their work is representative of the departmental commitment to improving the health and well-being of the children of Connecticut and beyond.

Advocacy Education in Northeast Pediatric Residency Programs

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Introduction.—Pediatricians often play a vital role as advocates for support of the health of children within the community. To enhance the pediatricians' effectiveness in this role, pediatric residency programs include preparation of their matriculants in health-care advocacy for children. This study examines the chief residents' perception of their training in this area.

Methods and Materials.—Chief residents (1995-96) completed a written survey which examined advocacy for children's health-care needs as a focus in their pediatric residency education. Chief residents from all 15 programs in the organization of Northeast Pediatric Program Directors, including all of the pediatric programs in New England, and the program at Albany Medical College, responded to the survey.

Results.—One third of respondents felt that there was a strong or moderate focus on child health-care advocacy education in their programs, while the rest felt that there was either only a small emphasis or no emphasis at all.

Methods for advocacy education in various programs include: formal lectures (26%), informal discussion groups (46%), larger conferences (30%), and hands-on participation in advocacy activities such as a pediatric advocacy rotation, attending legislative meetings with attending physicians, case conferences dedicated to advocacy, or resident involvement in American Academy of Pediatrics activities (26%). Only 20% of respondents felt that there was an adequate focus on advocacy education in their program.

Conclusion.—Although most pediatric residency programs in the Northeast are providing some education in child health-care advocacy, most chief residents surveyed (80%) feel that the focus is inadequate. Methods for more effectively integrating advocacy education in pediatric training programs include incorporating more hands-on experience into the curriculum and more formal didactic teaching.

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Is Magnesium Neuroprotective to the Fetus?

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Introduction.—Administration of magnesium sulphate (MS) to pregnant women has been associated with improved neonatal survival and lower risk of cerebral palsy (CP). MS blocks the N-methyl diamino aspartate receptor, a proposed mechanism for inhibiting hypoxic brain injury. It is not known whether or not MS reduces the incidence of intraventricular hemorrhage (IVH), a marker for hypoxic-ischemic brain injury.

Methods and Materials.—We hypothesize that the maternal administration of MS would decrease IVH. We retrospectively examined records of 470 inborn (1 July 1989 to 31 October 1995) infants (23 to 32 weeks gestation) who survived to discharge.

Results.—None of the mothers had pregnancy-induced or chronic hypertension. All infants had cranial ultrasound within the seven to 10 days. Infants were classified into MS Group (mothers received MS); Non-MS Group (mothers received other tocolytics) and Control Group (mothers who received no tocolytics). The demographic profile of the study population is as follows:

Variable	MS Group (n=173)	Non-MS Groups (n=150)	Control Group (n=147)
Birth weight (g)	1,280 ± 33	1,355 ± 53	1,260 + 38
Gestation (wks)	28.7 ± 0.20	28.9 ± 0.19	28.7 + 0.22
Cord pH (arterial)	7.31 ± 0.66	7.28 ± 0.09	7.30 + 0.09
Apgar @ 5 minute	7.60 ± 0.13	7.8 ± 0.12	7.50 + 0.15
Respiratory distress syndrome	103 (59.5%)	96 (64%)	85 (57.5%)
Surfactant given	69 (39.8%)	61 (40.6%)	52 (35.3%)
Patent ductus arteriosis	41 (23.6%)	36 (24.1%)	36 (24.4%)
Chorioamnionitis	39 (23.2%)	49 (33.3%)	41 (28.2%)
Prenatal steriods	147 (84.9%)	103 (68.6%)	80 (57.9%)
IVH* Grades I-IV	16 (9.24%)	15 (10%)	10 (6.80%)
IVH Grades III-IV	3 (1.73%)	7 (4.70%)	5 (3.40%)
Mortality	14/187 (7.48%)	22/172 (12.8%)	28/175 (16%)

*IVrl = intraventricular hemorrhage

IVH grades are similar in three groups. When MS was given in the antenatal period, it does not decrease the incidence of IVH in nonasphyxiated preterm infants, and 7.48 % died in the MS group when compared to 16% in the control group ($P>0.02$).

Conclusion.—We speculate that the lack of difference in IVH rates may be due to no evidence of hypoxic insult in our study population. However, long-term follow-up is needed to confirm the presence or absence of any neuroprotection.

Hunger and Child Health in Puerto Rico and Hartford: A Comparison of Children at Different Levels of Food Insecurity

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This study examines the relationship between hunger as developed by the Hartford Community Childhood Hunger Identification Project (CCHIP), and a clinical assessment of health indicators through a medical record audit. To compare differences between urban and rural settings, children one to three years of age who visited the Hartford Burgdorf Clinic, and the migrant worker's health clinic COSSMA in Cidra, Puerto Rico, were surveyed. In Hartford (N=108), 55.5% of children were classified as hungry whereas in Puerto Rico (N=51), only 23.5% were hungry. The Puerto Rican sample had larger household size, more paternal involvement in child care, more home-grown foods, and more sources of family financial support than the Hartford sample.

These differences suggest that the extended family network in Puerto Rico provides a support system that Hartford children lack. In both Puerto Rico (N=51) and Hartford (N=66), hungry children were more likely to have more than one chronic condition and had higher frequencies of low birth weight and prematurity than non-hungry children. In Puerto Rico, the hungry group had higher rates of asthma and anemia than the non-hungry group. The correlation of hunger with chronic clinical problems suggests that the eight-question CCHIP Hunger Scale may be a valuable clinical tool to identify quickly children who are at risk of developing both nutritional and health problems.

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Bicycle Safety Education in Connecticut Schools

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and Connecticut Children's Medical Center, Hartford

Introduction.—In Connecticut bicycle-related injuries kill eight and result in hospitalization for 289 children, on average, annually. Although bicycle helmet use was mandated by law in 1993 for bicyclists under 12 years of age in Connecticut, it is unclear if schools teach or enforce this law.

Methods and Materials.—We surveyed 149 Connecticut school districts to measure bicycle safety, helmet usage, and helmet- law instruction.

Results.—Of 112 (75%) responding schools 32% offer bicycle safety instruction, 27% advise helmet use, and 23% discuss the helmet law. Instruction is primarily in kindergarten through fifth grade in formal classes. Several utilize community trainers (ie, local police, cycling clubs). One in three schools have greater than 5% of students enrolled bicycling to school; only 13% have bicycle helmet policies in effect. Reasons offered for absence of policies were: not applicable (41%), never thought about it (36%), no reason (20%), not the school's responsibility (12%), and not aware of the law (5%). Only 11% of schools teach bicycle traffic safety and require bicycle helmets.

Conclusions.—Bicycle traffic and helmet education varies widely in Connecticut schools. Only a few schools sponsor bicycle helmet policies and these only for a minority of their student bicyclists. Currently, bicycle traffic and helmet education is not taught or enforced at most schools at any grade level.

Better Survival of Fetal *vs* Adult Type II Pneumocytes in Hyperoxia is not Due to Increases in Antioxidant Enzyme Activity

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Abstract.—Exposure to hyperoxia in lung damage is a factor in development of chronic lung disease. Previous studies of fetal lung *in vivo* and in organ culture have shown that the activities of antioxidant enzymes increase from late gestation to postnatal life. We have recently shown increased activities of antioxidant enzymes in adult type II pneumocytes exposed to hyperoxia. We hypothesized that fetal type II pneumocytes would show a decreased response.

The goal of the present study was to measure the effect of hyperoxia on the activities of the catalases, glutathione reductase, glutathione peroxidase, and cytosolic superoxide dismutase in cultures of the 19-day fetal rat type II pneumocytes. Control cells were kept in 95% room air, 75%CO_2, while the hyperoxia group was exposed to 95%O_2, 75%CO_2 for 24 hours. Viability was determined by the trypan blue. Results indicate mean ± SEM values of three experiments. (Antioxidant enzymes in nmol/min/mg protein, adjusted for cell viability.) Fetal type II pneumocytes tolerate better (smaller reduction in viability and no increase in LDH release) than adult type II pneumocytes. In fetal type II pneumocytes only glutathione peroxidase and superoxide dismutase showed a significant increase. Other protective antioxidant factors might account for the better survival of fetal type II pneumocytes in hyperoxia.

	Adult Cells		Fetal Cells	
	Control	**Hyperoxia**	**Control**	**Hyperoxia**
Viability	95%	50%	68%	61%
LDH release	13.2 + 0.4%	22.3 + 2.3%*	4.3 + 0.8%	5.6 + 1.4%
Catalase	4.7 + 0.3	15.4 + 1.4†	8 + 2	17.7 + 6
Glutathione reductase	20.6 + 1.8	68.9 + 10.8†	27.2 + 7	40.3 + 7
Glutathione peroxidase	23.9 + 2.1	71.7 + 3.7‡	21.8 + 1.9	49.1 + 9.5*
Sytosolic superoxide dismutase	5.6 + 0.6	15 + 1.8†	2.8 + 0.3	12 + 2.7§

*$P<0.05$, †$P<0.01$, ‡$P=0.001$, §$P<0.03$, *vs* respective controls

Pulmonary Hemorrhage in Neonates

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Abstract.—Pulmonary hemorrhage is infrequently seen in neonates but carries a very high mortality. Our understanding of this process is limited, and this retrospective study was designed to describe the clinical correlates of this process. We identified all cases of pulmonary hemorrhage in our tertiary care Neonatal Intensive Care Unit from 1 July 1988 to 30 June 1995, and reviewed details of the episode.

Two controls case-matched for gestational age and birth weight were obtained from the same database. Of the 2,980 admissions over the seven-year period, pulmonary hemorrhage was diagnosed in 42 infants (incidence 1.4%). The mean age of occurrence was 3.1 days (range two hours to 25 days). Factors associated with pulmonary hemorrhage are shown. Statistical analysis by χ_2 test (*) or Mann-Whitney test (†) where appropriate.

Factors	**Cases (n=42)**	**Controls (n=84)**	***P* value**
Multiple gestation (no.)	14 (33%)	15 (18%)	0.05*
Apgar 5 minutes (mean + SEM)	6.2 ± 0.03	7 ± 0.2	0.02†
Respiratory distress syndrome (no.)	33 (79%)	45 (54%)	0.01*
Surfactant use (no.)	26 (62%)	35 (42%)	0.03*
Survival (no.)	18 (43%)	63 (75%)	0.0004*

No statistical significance was seen between the two groups in regard to antenatal cortiosteriods, pregnancy induced hypertension, maternal chorioamnionitis, cord pH, presentation, and mode of delivery, 1 min. Apgar, race, sex, sepsis, patient ductus arteriosus, or intraventricular hemorrhage. All infants with pulmonary hemorrhage were supported by mechanical ventilation prior to and during the episode.

Pharmacologic support prior to/during the episode of pulmonary hemorrhage included bicarbonate/tris-(hydroxymethyl)aminomethane (THAM) in 21 (50%), inotropic drugs in 15 (36%), fluid volume in 33 (79%), analgesics/sedatives in 11 (26%) and paralysis in 5 (12%). Treatment consisted of increasing mean airway pressure, nebulized epinephrine, nebulized 4% cocaine either singly or in combination. Outcome is shown below.

	Pressure alone (n=14)	**Pressure + Epi (n=5)**	**Pressure + Cocaine (n=14)**	**Pressure + Epi + Cocaine (n=9)**
Survival (no.)	6 (43%)	2 (40%)	8 (57%)	2 (22%)

We conclude that multiple gestation, a low Apgar at five minutes, respiratory distress syndrome, and surfactant use are associated with a significantly increased incidence of pulmonary hemorrhage.

Nebulized cocaine and epinephrine may be useful as adjuncts to increasing mean airway pressure in treating pulmonary hemorrhage in neonates.

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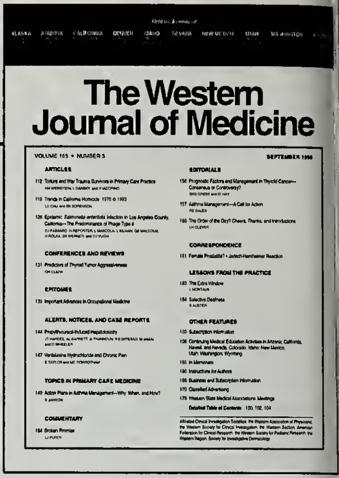

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Important Advances in Clinical Medicine

Pediatrics

Myles B. Abbott, M.D., Richard L. Oken, M.D., and
Moses Grossman, M.D., Section Editors

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in pediatrics. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, as to both scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Pediatrics of the California Medical Association, and the summaries were prepared under the direction of Myles B. Abbott, M.D., Richard L. Oken, M.D., and Moses Grossman, M.D., and the panel.

Bacterial Resistance and the Dilemma of Antibiotic Usage

IN THE sixty years since the first clinical use of sulfonamides, there has been a remarkable explosion of antimicrobial agents. Physicians typically greet the introduction of new agents with enthusiasm, reflected by rapidly increasing use. Predictably, pathogens adapt to the high usage by developing resistance, and the drug's value is severely jeopardized. This pattern of discovery, exuberant use, and predictable obsolescence has occurred with virtually every antimicrobial agent. The pharmaceutical industry has, until recently, dealt successfully with antimicrobial-resistant strains by developing new drugs or drug combinations, often just in the nick of time. But we are now faced with some bacterial pathogens for which virtually no effective antimicrobial agent exists.

Examples of pathogens' adaptation for resistance abound. *Staphylococcus aureus* isolates, once universally sensitive to penicillin, are now invariably resistant to penicillin and sometimes to methicillin and the other semisynthetic penicillinase-resistant penicillins as well. Isolates of *Streptococcus pneumoniae* are also becoming increasingly resistant to penicillin; nationally about 10% to 15% of strains are relatively resistant (minimal inhibitory concentration [MIC], ≥0.1–1.0 μg/ml) and about 3% are absolutely resistant (MIC ≥2 μg/ml) to penicillin. Although most species of streptococci remain sensitive to β-lactam antibiotics, enterococci are exceptions. A high proportion of enterococci are resistant to ampicillin and aminoglycosides, and some strains are also resistant to vancomycin. In addition, gram-negative pathogens are frequently resistant to antibiotics; as a result of β-lactamase production, 30% to 40% of strains of *Haemophilus influenzae* and almost all *Moraxella* species are resistant to β-lactam agents. Gram-negative enteric organisms, especially those responsible for nosocomial infections, have developed stepwise resistance to an increasing number of antimicrobial agents. The mechanisms of resistance depend on the type of bacteria and class of antibiotics; for example, β-lactamase production is the principal mechanism of bacterial resistance to β-lactam antibiotics, whereas enzymatic inactivation is the principal mechanism of aminoglycoside resistance among gram-negative pathogens. In the case of *Streptococcus pneumoniae,* the mechanism of resistance is the reduced capacity of penicillin-binding proteins in the bacteria to bind to the antibiotic molecules.

These trends in antimicrobial resistance have substantial implications for the empiric therapy of most bacterial infections. In the ambulatory setting, the most important decision regarding antibiotics is whether they should be used at all. In the first place, it behooves physicians to withhold antibiotic therapy when the most likely diagnosis is a viral infection. If antibiotics are prescribed, an appropriate narrow-spectrum drug should be selected. Physicians should be reluctant to prescribe the latest,

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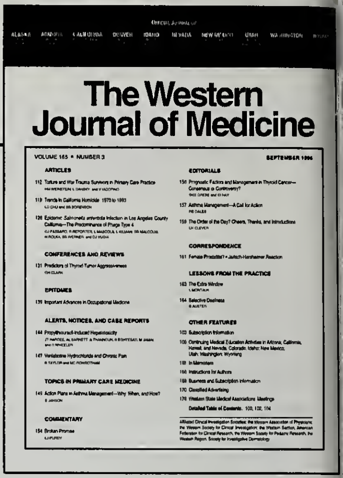
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EPITOMES OF PROGRESS

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broadest-spectrum agent, since this practice will aggravate the problem of increasing drug resistance. Antibiotics also should be prescribed for as short a period of time as possible. For example, the duration of therapy for otitis media, the most common bacterial infection in children, usually can be limited to five days (rather than the usual seven to 10 days) if the child responds rapidly and is not at high risk for a complicated infection, such as those with frequently recurrent episodes.

For the sick, hospitalized patient who may have a life-threatening bacterial infection, one must carefully consider prevalent patterns of drug resistance before instituting therapy. For example, in most areas of the United States it is no longer acceptable to treat patients with suspected bacterial meningitis solely with penicillin or a third-generation cephalosporin. Increasing resistance of *Streptococcus pneumoniae* (the most common cause of bacterial meningitis in infants and children) to penicillin and cephalosporins mandates the empiric use of vancomycin, pending definitive identification and sensitivity testing of the bacterial isolate. Physicians caring for hospitalized patients, in addition to carefully selecting antibiotics for the empiric therapy of critically ill patients, must limit the use of broad-spectrum antibiotics that perpetuate multiple drug resistance and predispose these patients to superinfections.

The increase of antimicrobial resistance demands the attention of all physicians. Antibiotics must be used judiciously: the overzealous use of antibiotics in the past has resulted in our compromised ability to manage bacterial infections today. It is only through the thoughtful prescription of antibiotics that the balance between antibiotic use and drug resistance can be regained. Our obligation extends beyond our individual patients to the entire community of patients for whom we are responsible.

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Advances in the Treatment of Respiratory Failure in Newborns

ENORMOUS strides in the treatment of respiratory failure have significantly reduced neonatal mortality and morbidity. Recent advances in technology that target specific respiratory disease processes have further improved the outlook for newborns with respiratory failure.

Hyaline membrane disease (HMD), a major cause of mortality and morbidity in premature infants, is caused by a surfactant deficiency. Extensive animal studies and clinical trials have shown that surfactant replacement is effective in both preventing HMD ("prophylactic" treatment) and treating established HMD ("rescue" treatment). Two forms of replacement surfactant are available for clinical use: Survanta, a modified bovine surfactant, and Exosurf, a totally synthetic surfactant. Infasurf, another modified calf lung surfactant extract, will likely be approved by the FDA soon. In addition to its role in the treatment of infants with HMD, surfactant may be useful for the treatment of other diseases characterized by surfactant deficiency or inactivation, such as meconium aspiration syndrome.

Improved ventilator technology has played an important role in managing neonatal respiratory failure. Intermittent mandatory ventilation (IMV) was the standard mode of therapy for treatment of HMD for more than 30 years. With IMV, a fixed number of breaths is delivered at defined intervals, and the patient has no control over the timing of the breaths. Today, patient-triggered ventilation and high frequency ventilation (HFV) have largely replaced IMV. Synchronized intermittent mandatory ventilation (SIMV) and assist/control ventilation (ACV) allow the patient to adjust the timing of breaths by "triggering" the ventilator. Both SIMV and ACV deliver more uniform breaths than does IMV, and they cause less ventilator-induced variation in arterial blood pressure. SIMV gives a fixed number of breaths each minute, but the breaths are synchronized with the patient's respiratory effort. With ACV, each patient effort is assisted by the ventilator. Clinical trials of both SIMV and ACV suggest that infants ventilated with these patient-triggered modes are extubated sooner than infants ventilated with IMV.

High frequency ventilation (HFV) is principally used in managing critically ill neonates with severe restrictive lung disease, such as respiratory distress syndrome, meconium aspiration, and pulmonary hypoplasia. Unlike conventional ventilators that mimic normal tidal breathing, HFV delivers extremely small breaths at rates as high as 900 breaths per minute. Although these "breaths" are often as small as or smaller than dead space volume, they are able to achieve effective gas exchange primarily by causing gas mixing between the upper airway and the alveoli. The three main forms of high frequency ventilation are high frequency oscillatory ventilation (HFOV), high frequency jet ventilation (HFJV), and high frequency flow interruption (HFFI). HFOV uses an oscillating diaphragm that delivers a sinusoidal pressure wave to the patient, usually at rates between 600 and 900 breaths per minute. HFJV injects small, high velocity, "jets" of gas into the airway, usually at 420 breaths per minute, and operates in conjunction with a conventional ventilator, using a triple-lumen endotracheal tube adapter that allows both ventilators to be connected to the patient simultaneously. HFFI "interrupts" the flow of gas to the upper airway, generating high frequency breaths that have some of the characteristics of both HFOV and HFJV breaths. Studies have yielded conflicting results about possible increased neurological morbidities associated with these techniques.

When ventilatory methods fail in term and near-term infants, extracorporeal membrane oxygenation (ECMO) is the next line of therapy. ECMO is a form of prolonged cardiopulmonary bypass, allowing support of infants with severe pulmonary failure. There are two types: venous to arterial and venous to venous. The use of ECMO at designated centers—most commonly for newborns with severe meconium aspiration, pulmonary hypertension, or diaphragmatic hernia—has dramatically reduced the mortality of these disorders. The average responder requires less than a week of ECMO therapy and then is returned to ventilatory support. One major complication from ECMO is intracranial hemorrhage secondary to anticoagulation therapy. A second major complication is the loss of the carotid artery when venous-to-arterial ECMO is used and the carotid artery is not reconstructed. The long-term neurodevelopmental sequelae of ECMO are unknown.

Research continues to evaluate treatments for infants with severe respiratory distress. Two investigational pharmacologic agents show great promise but are not in use outside of research protocols. Nitric oxide (NO), a potent pulmonary vasodilator, reverses pulmonary hypertension, a major component of many neonatal lung diseases. It acts by decreasing pulmonary vascular resistance and improving oxygenation. Another agent, perfluorocarbon, is a dense liquid in which oxygen and carbon dioxide are soluble. When used to fill the lungs in a process called liquid ventilation, it provides gas exchange and decreases atelectasis, improves pulmonary blood flow, and decreases lung inflammation.

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Helicobacter pylori Infection: Pediatric Aspects

HELICOBACTER PYLORI is a major cause of peptic ulcer disease in children. Although discovered in the early 1900s, *H. pylori's* role in human gastrointestinal disease was appreciated only upon its successful culture by Marshall and Warren in 1983. Numerous studies in adults and children have established a strong association between *H. pylori* colonization and both antral gastritis and peptic ulcer disease. Most children and adults infected with *H. pylori,* however, have no apparent symptoms, and few will develop peptic ulcer disease.

H. pylori is a spiral, gram-negative, urease-producing organism that infests the area between the gastric epithelium and the overlying layer of mucosa. Initial infection with *H. pylori* usually occurs in childhood via fecal-oral transmission. Familial clustering of cases suggests either person-to-person or common-source acquisition. Vertical transmission from mother to newborn infant appears to be rare; breastfeeding may provide some degree of protection from *H. pylori* infection during infancy. The prevalence of colonization increases with age in developed countries, with approximately 10% of children infected by age 10. In nonindustrialized countries and in lower socioeconomic groups, up to 50% of children are positive for *H. pylori* by age 10.

H. pylori colonization produces a chronic infection with variable clinical consequences. Virtually all infected individuals have histologic evidence of antral gastritis, but the majority are asymptomatic. A relatively small percentage of infected children will develop peptic ulcer disease, but of those with peptic ulcer disease, the incidence of *H. pylori* supports a causal connection. In a review of 18 pediatric studies by Macarthur et al, the median prevalence of *H. pylori* infection was 92% in children with duodenal ulcers and 25% in those with gastric ulcer disease. The factors that influence the ultimate clinical course of *H. pylori* remain largely unknown. One reason that some individuals develop peptic ulcer disease while most remain asymptomatic may be variability in *H. pylori* strains. Individual strains containing the cytotoxic-associated gene A *(cagA)* appear to cause more severe gastritis and an increased incidence of peptic ulcer disease. An individual's immunologic responses may also affect the course of *H. pylori* infection.

The importance of *H. pylori*-associated gastritis, in the absence of peptic ulcer disease, remains controversial. At best, there is a weak and inconsistent relationship between *H. pylori* and "classic" recurrent abdominal pain of childhood (vague pert-umbilical pain without associated diarrhea, weight loss, or nocturnal awakening). *H. pylori* has been strongly associated with the development of gastric adenocarcinoma and gastric MALT lymphoma. Since the incidence of gastric cancer is three to six times higher in *H. pylori*-infected individuals, the World Health Association's International Agency for Research on Cancer has classified *H. pylori* as a "Group 1" (definite) carcinogen.

Diagnosis of *H. pylori* infection can be accomplished by both non-invasive and endoscopic techniques. In general, non-invasive tests are useful as initial screens, and endoscopy is reserved for confirming peptic ulcer disease or when upper gastrointestinal bleeding occurs or treatment fails. Non-invasive tests consist of serology by immunoassays (eg, ELISA) and urea breath tests. Both have a high sensitivity and specificity. Urea breath tests are based on the measurement of breath ^{14}C or ^{13}C-labeled CO_2 produced when urease-producing *H. pylori* organisms in the stomach split labeled urea. During endoscopy *H. pylori* can be identified by histologic evaluation of gastric mucosal biopsies and by the rapid urease test, in which a biopsy sample is placed in a gel containing urea and a pH indicator. If the tissue contains *H. pylori* organisms, urease will split the urea, liberating ammonia and raising the pH, causing a change in the gel color from yellow to pink. Cultures of gastric biopsies are not routinely performed because of their difficulty and expense.

Treatment is currently recommended for all patients with *H. pylori*-associated peptic ulcer disease. Without treatment, infection appears to be lifelong, since spontaneous remission is rare. Eradication of *H. pylori* dramatically decreases ulcer recurrence and may also decrease the recurrence of complications, such as hemorrhage. Treatment is complicated by the relative resistance of *H. pylori* to single antibiotic therapy. The most widely used treatment regimen for children consists of triple therapy with amoxicillin, metronidazole, and bismuth for two weeks and an antisecretory agent, usually an H-2 blocker, for eight weeks. Although effective in eradicating *H. pylori* in approximately 75% of cases, this regimen may be complicated by intolerance and poor compliance. Studies have demonstrated eradication of *H. pylori* after a one-week course of clarithromycin, omeprazole, and amoxicillin. Pediatric trials testing a number of alternative regimens using one or two antibiotics are currently under way. Urea breath tests, which should be available soon, will be useful in documenting eradication of *H. pylori* following antibiotic therapy.

In the absence of peptic ulcer disease, treatment of children with gastritis and/or recurrent abdominal pain of childhood associated with *H. pylori is* controversial. Children with chronic epigastric or retrosternal pain, with or without associated nausea, emesis, or family history of peptic ulcer disease, should be considered possible candidates for *H. pylori* infestation.

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Update on Childhood Asthma

THE last decade has witnessed a dramatic change in the understanding and management of childhood asthma. Asthma is now viewed primarily as an inflammatory process, not a bronchospastic disorder. At the same time, the incidence, morbidity, and mortality of asthma are increasing. Childhood asthma incidence in many urban areas of the United States is now reported to be approaching 20%.

Inhaled corticosteroids are the most effective means of treating airway inflammation. Four inhaled corticosteroids are currently available: beclomethasone, flunisolide, fluticasone, and triamcinolone. All are administered twice daily; the dosage of each drug varies. The Food and Drug Administration (FDA) has approved inhaled corticosteroids as first-line therapy to prevent symptoms in chronic asthma, from mild to severe. Delivery by inhalation reduces systemic availability and the potential for adverse effects, but clinicians should be aware that high-dose (doses greater than 1,000 to 1,200 μg inhaled corticosteroid per day), long-term use poses a risk of delayed bone growth and adrenal insufficiency in children. To watch for bone effects, the child's growth should be monitored closely. Signs and symptoms of adrenal insufficiency may be seen when a child is exposed to trauma, surgery, or infection. Children may also experience hypothalamic-adrenal-axis (HPA) suppression as the dose of the drug is tapered. Recovery from HPA suppression may take several months.

Antileukotriene drugs represent a new class of asthma therapy. Leukotrienes, which are formed by the breakdown of arachidonic acid in the airways, contribute to asthma by causing airway edema, airway smooth-muscle constriction, and altered airway cellular activity associated with the inflammatory process. Antileukotrienes fall into two categories: receptor antagonists and 5-lipoxygenase inhibitors that reduce leukotriene synthesis. Clinical trials have found that both forms improve pulmonary function and reduce asthma symptoms in clinical asthma and cold-, exercise-, and aspirin-induced asthma. Zafirlukast, a leukotriene receptor antagonist, is the first FDA-approved medication of this type. The recommended dose of zafirlukast is 20 mg orally twice a day, administered at least one hour before or two hours after meals. It is not approved for use in children under the age of 12 years.

Peak flow measurements remain an important tool for children with severe or "brittle" asthma and for patients unable to gauge asthma severity. Clinicians should be aware of the limitations of peak flow measurements, however. Measuring peak flow may not improve treatment outcomes in patients with moderate asthma, and peak-flow-driven self-management plans apparently are no more effective than symptom-driven plans. The problems stem from poor compliance; falsification of recordings (one quarter of recordings are made up); and the unreliable performance of many home-use peak-flow meters, particularly in overreading midrange levels. In addition, the published levels at which treatment should be increased may be too low for some patients. In planning treatment, the clinician should adjust for inaccuracies in peak-flow meters and set treatment action-points on an individual basis.

Education and patient advocacy are essential to management of asthma patients, especially those with severe asthma. One way to provide both elements is through a case manager model, in which the physician or a designated case manager under the physician's supervision serves as both educator and facilitator. As an educator, the case manager helps patients and their families understand asthma physiology, asthma triggers, and the appropriate use of medications and devices (such as inhalers and peak-flow meters). Other case manager functions include assisting in the development and understanding of treatment plans and providing information about environmental measures to reduce allergens in the home. As a facilitator, the case manager helps find access to medical care and support groups; provides referrals for other needed treatments, such as psychological counseling or smoking cessation programs; and assists with housing, insurance, and other issues that affect asthma care.

Finally, one of the more exciting developments in childhood asthma care is the discovery that early intervention may reduce both the risk for developing childhood asthma and its severity. To prevent sensitization in children at high risk for allergies (ie, with family history of allergy/atopy), the child's diet should exclude cow's milk for the first year of life, eggs for two years, and peanuts for three years. Risk and severity may also be reduced by environmental controls to avoid exposure to dust mites and tobacco smoke.

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Immunization Update

THE 1997 recommended immunization Schedule for Children reflects several important changes, including the recommended use of acellular pertussis vaccines combined with tetanus and diphtheria toxoids (DTaP) for use in infants; increased use of inactivated poliovirus vaccine (IPV) for healthy children; and guidelines for delivery of immunizations to adolescents. In addition, approval is expected for several new vaccines.

Pertussis

Three DTaP products have been approved for the primary series in infancy: ACEL-IMUNE, Infanrix, and Tripedia. In European clinical trials, these products were 80%–89% efficacious for preventing pertussis, comparable to or better than the efficacy of whole-cell pertussis vaccines used in the United States. DTaP also causes fewer reactions (fever, irritability, swelling) than whole-cell preparations and is therefore preferred. Whole-cell vaccine is an acceptable alternative, however. It has the advantage of being combined with *Haemophilus influenzoe* type b (Hib) vaccines for use in infancy, thus decreasing the number of injections administered. Tripedia combined with Hib (TriHIBit) is approved for children 15 months of age and older. The manufacturer anticipates FDA approval for use in infants in the summer of 1997.

Hepatitis B

All infants should be immunized against hepatitis B (Hep B), and all adolescents not previously immunized should be vaccinated. There are two hepatitis B products, Energix B and Recombivax, which can be used interchangeably if necessary. Energix B has received approval for the same dose (10 μg) to be used for all children from birth through 19 years of age. Recombivax is approved as a 2.5-µg dose through 10 years of age for children born to HBsAg-negative women, and as a 5-µg dose from 11 to 19 years of age for children born to HBsAg-negative women and for children of all ages born to HBsAg-positive women. COMVAX, a new combination product containing Hib (PRP-OMP) and Recombivax (5 µg), has recently become available. COMVAX can be used for routine immunization of all children six weeks of age and older.

Hepatitis A

Two hepatitis A vaccines (Havrix and VAQTA) have been licensed for children two years of age and older. The vaccines are indicated for children with chronic liver disease and those traveling to areas with high rates of hepatitis A or living in high-risk communities.

Polio

Thanks to the intense efforts coordinated by the Pan American Health Organization, the Western Hemisphere has been free of paralytic polio caused by wild-type poliovirus since 1991. The target for global eradication is the year 2000. Because of the decreased risk of exposure to wild-type polio viruses and the eight to 10 cases per year of vaccine-associated paralytic polio, the U.S. routine immunization schedule now emphasizes the increased use of IPV. Advisory groups consider the use of IPV alone, OPV alone, or a sequential schedule of two doses of IPV followed by two doses of OPV to be acceptable immunization schedules. The Advisory Committee on Immunization Practices (ACIP) gives preference to the sequential schedule, as this will prevent 50%–75% of the eight to 10 cases of vaccine-associated paralytic polio while maintaining optimal intestinal immunity in the general population.

Varicella

The recently released ACIP recommendations on varicella vaccine are consistent with the 1995 American Academy of Pediatrics guidelines. Both call for universal immunization of healthy children one year of age or older who have not had chicken pox. The varicella vaccine (Varivax) is also strongly recommended for all susceptible people in contact with immunocompromised children. The risk of the vaccine virus being transmitted from a vaccinated child to a close contact is minimal and is far outweighed by the benefits of immunization. One dose of Varivax is recommended for children under 13 years of age, two doses at 13 years and older.

Combination Products

The number of injections required to immunize children fully has increased, but combination products will help correct this problem. Two new combination products have been approved recently. COMVAX is available for use in infants and children, and TriHIBit is approved for use at 15 months or older. Currently TriHIBit must be mixed by the health care professional before administration, but should be available as a single product by mid-1997. Other combination products including DTaP/Hep B, DTaP/IPV/Hib, and DTaP/IPV/Hep B are being developed, and several manufacturers hope to produce a DTaP/Hep B/Hib/IPV combination for use at two, four, and six months of age. Thus, practitioners will shortly have several combination products from which to choose. Because not all components of combined vaccines are identical, problems may arise if some children receive one or more extra doses of some antigens when practitioners change products or when children change doctors.

The Future

Rotavirus vaccine may be licensed within the next year. Conjugated pneumococcal vaccines may be available in the next few years. Respiratory syncytial virus and cytomegalovirus vaccines are still in research development.

Immunizations are among the most cost-effective means available for improving health. The improvement in children's health as a result of new vaccines added to the immunization schedule is most clearly illustrated by the Hib conjugate vaccines. Since widespread use beginning a decade ago, invasive Hib disease has virtually disappeared. New vaccines promise to eliminate other harmful infectious diseases.

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The Use of Umbilical Cord Blood Stem Cells for Hematopoietic Reconstitution

HEMATOPOIETIC progenitor cells, or stem cells, are pluripotent precursors to the entire blood and immune systems. Umbilical cord blood from newborns is the newest source of stem cells used to reconstitute a deficient hematopoietic system. The use of umbilical cord blood stem cells has been successful in more than 300 children and holds great promise as a principal source of stem cells.

Bone marrow transplantation (BMT) is still effective therapy for children with aplastic anemia, certain malignancies, and some genetic disorders. Historically, most transplants have been performed with marrow from human leukocyte antigen (HLA)-matched siblings. Engraftment with transplanted bone marrow takes about two weeks for neutrophils and three to four weeks for platelets. Donating cells for BMT is painful, may induce anemia, and incurs the risks of general anesthesia.

Since most potential recipients do not have related histocompatible donors, peripheral blood and umbilical cord blood provide alternative sources of hematopoietic stem cells. Stem cells from peripheral blood are obtained from the patient or a histocompatible donor. Cytokines, such as granulocyte colony-stimulating factor (G-CSF), are used to mobilize stem cells from the bone marrow to the peripheral blood. If the patient's own blood is used, chemotherapy usually occurs first. Engraftment with peripheral blood stem cells takes about a week less than with BMT.

The presence of significant numbers of stem cells in placental blood suggests the potential utility of umbilical cord blood as a source of stem cells for transplantation. At the time of delivery, the blood from the umbilical cord (usually 75–150 cc) can be collected and stored to give to the patient at a later time.

Umbilical cord blood has many advantages. Collection carries no risk to the donor. Ethnic diversity of HLA types is easy to achieve through a stem cell banking system. Contamination with viruses is uncommon. Search time for a compatible donor is minimized because HLA typing is done at the time of collection. Frozen stem cells have a very long—possibly indefinite—shelf life. Shipment and thawing are simple, so stem cells are available virtually on demand, minimizing delay to transplantation. There is also some evidence from preliminary clinical trials that, even when the donor and recipient are not histocompatible, the risk of graft-versus-host-disease (GVHD) after umbilical cord blood transplantation is reduced compared with bone marrow transplantation from unrelated HLA-matched donors.

Umbilical cord stem cells do carry potential disadvantages. Because of the small volume of cord blood, there is no backup in the event of graft failure, and there may not be sufficient quantities of stem cells to reconstitute an adult recipient. Maternal consent is required for testing of placental blood for infectious agents, genetic disorders, and drugs. Engraftment using cord blood averages 24 days for neutrophils and 72 days for platelets. Theoretically, the risk of tumor recurrence may increase because of a decreased risk of GVHD compared to BMT. There is a potential risk of contamination of umbilical cord blood specimens, either by bacteria or by maternal T lymphocytes that cross from the mother to the infant before delivery, although this has not yet been a clinical problem. Finally, storage of umbilical cord blood is costly—$1,000 to $1,500—and requires special quality controls.

Studies are in progress to establish standards for collection of umbilical cord stem cells and to determine the safety and utility of this source of stem cells in hematopoietic reconstitution. Stem cell expansion in vitro may increase the ability of cord blood to reconstitute hematopoiesis in larger recipients. Furthermore, umbilical cord blood stem cells may become an ideal target for gene therapy for patients with genetic disorders. Significant ethical issues remain to be resolved regarding the collection and utilization of placental stem cells.

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Attention Disorders: The Advance Is a Return to Basics

ATTENTION deficit/hyperactivity disorder (AD/HD), of which attention deficit disorder (ADD) may be a part, is a subject of much confusion and controversy. AD/HD is a constellation of behaviors that are thought to have biological origin. The condition is common, affecting 3% to 10% of elementary school-age children. In the last ten years, there has been a sharp increase in the prescription of stimulant medication for AD/HD, especially methylphenidate (Ritalin), raising questions about whether too many children are being diagnosed or whether these medications are being prescribed for conditions other than AD/HD.

AD/HD is defined by the presence of a significant number of inattentive and hyperactive-impulsive behaviors. *The Diagnostic and Statistical Manual of Mental Disorders,* Fourth Edition (DSM IV) lists 18 specific behaviors that indicate the presence of AD/HD. DSM IV describes three types of AD/HD: 1) inattentive, in which the child has at least six of nine inattentive behaviors but few hyperactive-impulsive behaviors; 2) hyperactive-impulsive, in which the child has at least six of nine hyperactive-impulsive behaviors but is not inattentive; and 3) combined, in which the child qualifies as both inattentive and hyperactive-impulsive (at least six of nine behaviors in each category). The combined type is seen most frequently, the inattentive type is often associated with learning disorders, and the hyperactive-impulsive type is uncommon.

The diagnosis of AD/HD is made primarily by history from parents and teachers, directly or through questionnaires; only well-standardized questionnaires should be used. A behavior is significant if it 1) is present and is more severe or occurs more frequently than in children of the same developmental age and 2) results in impairment of function in schoolwork or relationships with others. A physical examination should be performed to exclude conditions that mimic AD/HD (hyperthyroidism, neurologic disorders) or that exacerbate AD/HD (chronic illnesses, sensory disorders). Since laboratory studies cannot make or rule out a diagnosis of AD/HD, they should be obtained only to confirm or rule out a suspected medical or neurologic disorder. Since learning disabilities frequently accompany or mimic AD/HD, formal psychometric and educational assessments should be considered.

The differential diagnosis of AD/HD includes learning disabilities, speech and language disorders, pervasive developmental disorders (autism), and mental retardation. Behavioral disorders (opposition/defiance, conduct, anxiety, mood) also frequently co-exist with AD/HD and should be considered.

Once the diagnosis of AD/HD is confirmed, stimulant medication, alone or in combination with psychological therapies, is by far the most effective treatment, proving helpful in 60% – 90% of children with AD/HD. The most well-studied of the stimulant medications are methylphenidate (Ritalin), dextroamphetamine (Dexedrine), and pemoline (Cylert). Methylphenidate and dextroamphetamine are available in short- and long-acting forms. For a single, short-acting dose of methylphenidate, 0.3 mg/kg is administered minimally, up to 1 mg/kg maximally. The recommended dosage for the long-acting form of methylphenidate (RitalinSR) starts at 0.9 mg/kg/day, which can be supplemented with a late afternoon dose of short-acting methylphenidate, up to a maximum dose of 3.0 mg/kg/day. Dextroamphetamine is effective at one-half of the methylphenidate dose (0.15 to 0.5 mg/kg for a single, short-acting dose, and 0.45 to 1.5 mg/kg/day of the spansule form for a total per-day dose).

There is considerable variation in metabolism of these medications. Tolerance, indicated by a recurrence of AD/HD symptoms despite treatment, occurs almost universally, requiring increases in dosage over time and as the child grows. In such circumstances, the dose should be increased by at least half of the starting dose until a beneficial effect is seen. Methylphenidate and dextroamphetamine are safe and non-addictive when used in the above dose ranges for AD/HD. Side effects, especially appetite loss and difficulty falling asleep, occur frequently and can be helped by adjusting drug dosage and timing. A "zombie-like" state always indicates too high a dose; Tourette's syndrome is an uncommon effect that may or may not require discontinuance of medication. Pemoline is a central nervous system stimulant with a dosage ranging from 37.5 to 150 mg daily. Because pemoline has recently been reported to cause liver failure in a few patients, its use has come into question. When a sustained and sophisticated trial of stimulants is not effective, other medications may be used. Only thioridazine (Mellaril) has been shown to be effective, but it has serious side effects and should be used only under special circumstances such as significant growth failure or mental retardation plus AD/HD. Anti-depressants and clonidine are popular but have little research to support their use.

Psychological therapies are often helpful adjuncts to medication. Patients and families should be educated about AD/HD. Patients should receive appropriate and supportive discipline at home and at school. Intensive psychological therapies are of limited benefit, but in individual cases three modalities may be beneficial: 1) individual psychotherapy, especially as the patient approaches adolescence or adulthood; 2) family therapy, focusing on transactional issues such as family rules and limit setting; and 3) group therapy, such as social skills training or cognitive behavioral therapy that addresses self-control issues.

The outcome of AD/HD in adolescence and adulthood has been studied extensively. AD/HD disappears completely in only 20% of those diagnosed in childhood. The remaining 80% continue to have characteristics of AD/HD but with varying outcomes. About half of those who continue to have characteristics of AD/HD do relatively well once they get past formal schooling and move into the workplace. The other 50% have outcomes ranging from dysfunctional problems (continuing underachievement, instability of relationships) to serious psychiatric problems (psychopathic personality disorder, substance abuse).

Because AD/HD is common and the outcome is not benign, consultation with specialists is important when children do not respond to treatment. Further research on medications other than stimulants is urgently needed.

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MORBIDITY AND MORTALITY WEEKLY REPORT

Recommendations for Follow-up of Health-care Workers After Occupational Exposure to Hepatitis C Virus

HEPATITIS C virus (HCV) infection is a major cause of chronic liver disease in the United States and worldwide. At least 85% of persons with HCV infection become chronically infected, and chronic liver disease with persistently elevated liver enzymes develops in approximately 70% of all HCV-infected persons.[1] Persons with chronic hepatitis C are at risk for cirrhosis and primary hepatocellular carcinoma. Most HCV transmission is associated with direct percutaneous exposure to blood. Health-care workers (HCWs) are at occupational risk for acquiring this viral infection. However, no vaccine is available to prevent hepatitis C, and immune globulin is not recommended for postexposure prophylaxis.

In the absence of 1) pre-exposure or postexposure prophylaxis, 2) recommendations that are unique for HCV to prevent HCV transmission to others, and 3) effective therapy for most persons with chronic hepatitis C, the overall public health benefit associated with the identification of HCV infections in HCWs will be limited. However, to address individual workers' concerns about risk and outcome, CDC, in collaboration with the Hospital Infection Control Practices Advisory Committee, recommends that individual health-care institutions consider implementing policies and procedures for follow-up for HCV infection after percutaneous or permucosal exposures to blood.[2] At a minimum, such policies should include

- for the source, baseline testing for antibody to HCV (anti-HCV);
- for the person exposed to an anti-HCV-positive source, baseline and follow-up (eg, 6-month) testing for anti-HCV and alanine aminotransferase activity;
- confirmation by supplemental anti-HCV testing of all anti-HCV results reported as repeatedly reactive by enzyme immunoassay (EIA);
- recommending against postexposure prophylaxis with immune globulin or antiviral agents (eg, interferon); and
- education of HCWs about the risk for and prevention of bloodborne infections, including hepatitis C, in occupational settings, with the information routinely updated to ensure accuracy.

Follow-up studies of HCWs who sustained a percutaneous exposure to blood from an anti-HCV-positive patient have reported an average incidence of anti-HCV seroconversion after unintentional needlesticks or sharps exposures of 1.8% (range: 0-7%.[1-5] A seroconversion rate of 6% was documented in the United States[4]; in Japan, the incidence was 10% based on detection of HCV RNA by PCR.[5] Although these follow-up studies have not documented transmission associated with mucous membrane or nonintact skin exposures, the transmission of HCV from a blood splash to the conjunctiva was described in one case report .[6]

In February 1994, the Advisory Committee on Immunization Practices reviewed data about the prevention of HCV infection with immune globulin and concluded that there was no basis for supporting the use of immune globulin for postexposure prophylaxis of hepatitis C. There have been no assessments of the prevention of HCV infection with antiviral agents (eg, alpha interferon), and the mechanisms of the effect of interferon in treating patients with hepatitis C are poorly understood; an established infection may need to be present for interferon to be an effective treatment.[7] Interferon must be administered by injection and may cause severe side effects. Based on these considerations, postexposure prophylaxis regimens with antiviral agents for HCV infection are not recommended.

Several studies suggest that interferon treatment begun early in the course of HCV infection is associated with a higher rate of resolved infection. Among HCWs in the postexposure period, onset of HCV infection could be detected earlier by measuring HCV RNA using polymerase chain reaction (PCR) rather than by measuring anti-HCV using EIA. However, PCR is not a licensed assay, and the accuracy of the results are highly variable. In addition, there are no data indicating that treatment

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begun early during the course of chronic HCV infection is less effective than treatment begun during the acute phase of infection. Furthermore, alpha interferon is approved for the treatment only of chronic hepatitis C. Determination of whether treatment of HCV infection is more beneficial in the acute phase than in the early chronic phase will require evaluation with well-designed research protocols.

In the absence of postexposure prophylaxis, at least six issues need to be considered in defining a protocol for the follow-up of HCWs occupationally exposed to HCV:

1. **Limited data about the occupational risk for transmission.** Although needlestick exposure to infectious blood is a risk factor for hepatitis C and this risk is intermediate between that of hepatitis B virus and human immunodeficiency virus, data are limited or nonexistent about the risk for transmission associated with other types of occupational exposures. Thus, meaningful estimates of the risk for HCV infection cannot be provided to HCWs who sustain such exposures.
2. **Limitations of available serologic testing for detecting infection and determining infectivity.** Testing methods readily available in the clinical setting are subject to some limitations. For the commercially available EIAs that detect anti-HCV, the average interval between exposure and seroconversion is eight to 10 weeks. In many populations, including HCWs, the rate of false positivity for anti-HCV is at least 50%, and supplemental assays always should be used to assess the validity of repeatedly reactive EIA results. Approximately 5% of infections will not be detected unless PCR is used to detect HCV RNA. Although such assays are available from several commercial laboratories for research use, they are not standardized, and each test costs approximately $200. Both false-positive and false-negative results can occur as a consequence of improper handling and storage or contamination of test samples. In addition, the detection of HCV RNA may be intermittent, and a single negative PCR test result is not conclusive.
3. **Poorly defined risk for transmission by sexual and other exposures.** All anti-HCV-positive persons should be considered potentially infectious; however, neither the presence of antibody nor the presence of HCV RNA is a direct measure of infectivity in settings where inapparent parenteral or mucosal exposures occur. Although epidemiologic studies have implicated exposure to infected sexual and household contacts as well as to multiple sex partners in the transmission of HCV, the efficiency of transmission from these exposures is low.[1] Studies of infants born to anti-HCV-positive mothers have documented an average rate of perinatal transmission of 5%, increasing to 9% among infants born to mothers who were HCV RNA-positive at the infant's birth.[8] Acquisition of HCV-infection from breast milk has not been documented, and in studies of breastfeeding among infants born to HCVinfected women, the average rate of infection was 4% in both breastfed and bottlefed infants.[8]
4. **Limited benefit of therapy for chronic disease.** One benefit from a follow-up protocol is the opportunity for eligible HCWs to seek evaluation for chronic liver disease and treatment. Although alpha interferon therapy is safe and effective for the treatment of chronic hepatitis C,[9] sustained response rates generally are low (10%–20% in the United States); the occurrence of mild to moderate side effects in most patients has required discontinuation of therapy in up to 15% of patients. No clinical, demographic, serum biochemical, serologic, or histologic features have been identified that reliably predict which patients will respond to treatment and sustain a long-term remission.
5. **Cost of follow-up.** The estimated annual cost of providing postexposure follow-up testing nationally is $2–$4 million; the estimated cost for each person for a 6-month course of therapy is $200,000 (CDC, unpublished data, 1995).
6. **Medical and legal implications.** A postexposure follow-up protocol will address individual workers' concerns about their risk for HCV infection and possible disease outcomes, and identify those HCWs who become infected with HCV; this information provides HCWs with the opportunity to be counseled about their risk for transmitting HCV to others and to be evaluated for development of chronic disease, and, if eligible, for therapy for chronic hepatitis C.

Counseling recommendations to prevent transmission of HCV to others[10] are that 1) persons who are anti-HCV-positive should refrain from donating blood, organs, tissues, or semen, and 2) household contacts should not share toothbrushes and razors. However, there are neither recommendations against pregnancy or breastfeeding nor recommendations for changes in sexual practices among HCV-infected persons with a steady partner. Although HCV sometimes can be transmitted from persons with chronic disease to their steady sex partners, the risk for transmission is low despite long-term, ongoing sexual activity. Infected persons should be informed of the potential risk for sexual transmission to assist in decision-making about precautions. Persons with multiple sex partners should adopt safer sex practices, including reducing the number of sex partners and using barriers (eg, latex condoms) to prevent contact with body fluids.

Reported by: ***Hepatitis Branch, Division of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.***

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The Importance of Leadership Training in Medical Education

MARIA LENAZ, M.D.

ABSTRACT—Academic medical centers by virtue of their complex nature have made immense contributions to the education of professionals, application of research, and providing clinical services for people. Today they are being faced with many new challenges. One of these challenges, requiring new efforts, will be to incorporate leadership education into the curriculum. There are no other institutions more poised to assist in training future health-care leaders.

WHO will become the future health-care leaders? The practice of medicine has undergone significant changes in the past 25 years. These developmental changes have had significant effects not only on practicing physicians, but on medical educational institutions as well. The Association of American Medical Colleges in 1994 encouraged generalist medical education through generalist faculty development, teaching in ambulatory care sites, and teaching cost-effective diagnosis and treatment. Managed-care organizations could be instrumental as a means of teaching health promotion and disease prevention.[1]

It will be a challenge for medical educators to develop improvements through curriculum design or conferences to prepare future physicians for practice, while preserving the strengths of the existing medical education system. Practice management is an area where most students feel inadequately prepared. In addition, medical education has not provided them with the foundation to become future leaders in health-care management.[2]

The science as well as the art of medical management can be taught at both undergraduate and graduate medical education levels. The training should be a progressive developmental model with conceptual reinforcement through clinical applications to parallel traditional clinical medical education. This model should encompass basic concepts, clinical applications, and ultimately supervised practice.

The basic concepts of medical management deal with the structure and function of the health-care delivery system. First- and second-year medical students should be exposed to topics such as national health problems and trends, the future of medicine, the influence of technology, managed care, medical malpractice, health-care policy, and health insurance and reimbursement systems, as well as medical informatics. Some of this material would lend itself to small group discussions, whereas other aspects would be better suited to a lecture format.

Third- and fourth-year students should be introduced to quality assurance, utilization review, risk management, medical decision making, and practice management.

For those students demonstrating an interest and aptitude, an elective rotation in administrative medicine could serve as a springboard for future leadership training in ways to become effective leaders in health care.[3,4]

Students should be introduced to programs in quality assurance, utilization review, and risk management as practiced at their institution. Relevant topics in these areas could be integrated into the traditional clerkship teaching rounds. Within the discussion of patient-case management these topics could be related to the individual case under discussion.[5]

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With the growth of ambulatory care and the emphasis on ambulatory clinical education, students will be exposed to management issues and challenges associated with the practice of ambulatory medicine.

Quality assurance techniques and utilization review should be considered during a residency as well as cost-effective health care, practice management skills, and the necessity for continuing medical education following completion of residency training. Quality assurance and utilization review topics should be part of the resident's teaching rounds. The continued focus on the issues associated with ambulatory medicine should be covered. Residents should observe or take part in the utilization review discussions with attendings in a supervisory role.

Toward the completion of the residency, programs should be offered on practice management skills. This program may be offered as a conference or a seminar. The content for instruction should be specific for the specialty, but should encompass a review and discussion of the health-care system and important issues that they may face.

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Physician Deselection By Managed Care Plans: Due Process Guidance for Doctors Terminated Without Cause

STEPHEN E. RONAI, ESQ.

AMONG the many complaints voiced by physicians about managed-care organizations (MCOs) is the view that the lack of notice and hearing following an MCO "without cause" termination is the hallmark of the arbitrariness of the MCO contracting relationship.

While physicians excluded or terminated by MCOs and hospitals on competence or professional conduct grounds receive due process pursuant to the Health Care Quality Improvement Act (HCQIA) of 1986, 15 U.S.C. § 11115 *et seq.*, courts have uniformly refused to read similar notice and fair hearing protections into MCO-provider agreements when physicians have sought relief from allegedly peremptory "without cause" deselection decisions—until, that is, the recent decision of the New Hampshire Supreme Court in *Harper v. HealthSource New Hampshire. Inc.*, (1996 WL 172650 [N.H., 1996]).

Harper held, in a case of first impression, that an MCO-provider agreement must not be terminated for a reason that violates public policy and must be administered in a manner that is "fair and in the public interest," and that the termination of a physician by an MCO must comport with a covenant of good faith and fair dealing that is implicit in the MCO-provider relationship.

For Connecticut physicians, the coalescence of *Harper* and the Connecticut Supreme Court's recent rejection of the Employee Retirement Income Security Act (ERISA) as an MCO defense to patient and provider claims in *Napoletano v. CIGNA* and *Hollis v. CIGNA*, 238 Conn. 216 (1996), may foreshadow a new judicial trend and the long awaited leveling of the contracting playing field for physicians and other managed-care providers.

A typical MCO "without cause" provision provides that:

> Either party may terminate this Agreement without cause at any time by giving at least ninety (90) days prior written notice to the other party. Notwithstanding the foregoing, nothing shall prevent termination of this Agreement at any time upon the mutual agreement of the parties. In the event of termination under this section, Provider shall not be entitled to any hearing.

MCOs use such clauses to terminate provider contracts for numerous "business" or "economic" reasons generally unrelated to the competence or professional conduct of the physician, including: (a) a decline in provider enrollment which renders certain providers superfluous; (b) a decline in membership or geographical shift in members; (c) the MCO can get a better deal on price from other providers; or (d) the provider's economic profile demonstrates over-utilization or other inefficiencies.

Physicians seeking to contest these economically-based credentialing decisions have encountered judicial resistance, as courts have been unwilling to ignore the plain language of "without cause" contractual provisions that physicians had apparently willingly executed.

This restrictive approach to MCO credentialing was enunciated almost contemporaneously with *Harper* in *Texas Medical Ass'n v. Aetna Life Ins. Co.*, 80 F.3d 153 (5th Cir., 1996), which held that physicians terminated without cause from a Texas preferred provider organization (PPO) had no private cause of action to enforce Texas PPO Insurance Department regulations, which provided a due process review mechanism, and the Court remitted them to the Insurance Department to pursue that exclusive administrative remedy.

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Although there was scant judicial precedent to support the New Hampshire Supreme Court's construction of a legal theory for physicians to contest "without cause" deselections by managed-care organizations, a California line of cases does serve as a procedural antecedent for the *Harper* decision. The California Courts have long recognized "... a common law right to fair procedure protecting individuals from arbitrary exclusion or expulsion from private organizations which control important economic interests...." This doctrine had been applied by the California Courts to hospital medical staff decisions, until it was applied for the first time to an MCO termination in *Delta Dental Plan of California v. Banasky*, 27 Cal. App. 4th 1598, 33 Cal. Rptr. 2d 381 (1994). In *Delta Dental*, the Court held that because a dental health plan controlled "important economic interests," the health plan was required to afford participating dentists a fair procedure for appealing decisions affecting the fees that dentists could charge. In *Delta Dental*, the dispute was over whether a reduction in the Delta Dental Plan's "usual, customary, and reasonable fees" was subject to either binding arbitration or to review by Delta Dental's internal administrative review mechanism. In construing the language of the California Code of Civil Procedure (section 1094.5), the Court noted that Delta controlled an important economic interest as the largest dental health plan in California, covering over 8,000,000 individuals and that the plan had a "quasi-public significance." Therefore, continued membership in Delta's panel of participating dentists, *and Delta's modification of a participating dentist's list of usual, customary, and reasonable fees*, implicated the right of fair procedure and the aggrieved dentists were entitled to fair procedure including a notice and hearing [upon deselection], "... even if the rules of the association make no provision therefor...." See *Delta Dental*, 33 Cal. Rptr. 2d 381 at 385.

More recently, the *Delta Dental* doctrine was reaffirmed in *Potvin v. Metropolitan Life Insurance Company,* 63 Cal. Rptr. 2d 202 (1997), in which a physician's termination by a managed-care organization, without cause, was reversed. The physician's "malpractice profile" did not conform to the MCO's standards, but the terminated physician prevailed in his claim seeking the right to fair procedure.

Dr. Potvin, who was board certified in obstetrics and gynecology and a fellow of both the American College of Obstetrics and Gynecology and the American College of Surgeons, had consented to the settlement of various malpractice claims by his malpractice insurance carrier, without admitting liability. When he was terminated for "business reasons" pursuant to the without cause termination provision of his provider participation agreement, he instituted an action against Metropolitan seeking a reversal of the termination. The Court, citing the *Delta Dental* decision, held that Dr. Potvin did have a common law right to fair procedure and that Metropolitan could not terminate his membership in the health provider network without notice and hearing, so that a triable issue of fact existed as to whether Dr. Potvin had received that procedure.[†]

Harper rejects the restrictive attitude toward physician remedies related to MCO deselection, as evidenced by the Texas PPO decision, and proceeds in an entirely new and unique pro-physician/patient perspective that reflects the influence of the California fair procedure cases but does not mirror that doctrine.

Prior to Dr. Paul J. Harper's June 1994 termination by HealthSource as a health maintenance organization (HMO) plan surgeon, Harper and HealthSource were in an ongoing dispute concerning Harper's claim that HealthSource was "... manipulating and skewing the records of treatment he had provided to several of his patients and that such inaccuracies adversely affected other subsequent reports." Harper had served HealthSource as both a primary-care provider and as a surgeon since 1985. His dispute with HealthSource could be recharacterized as a claim that HealthSource was manipulating his utilization statistics to suit the HMO's own provider efficiency profiles. This claim, which could be viewed as MCO medical record "misconduct," helped Harper to paint a stylized picture of the arbitrary, capricious, and unreasonable nature of HealthSource's credentialing process.

After his "without cause" termination of the provider agreement, Harper was permitted to appear and state his case before several HealthSource committees. However, he was denied access to the evidence that purportedly formed the basis of the termination decision. Since approximately 30% to 40% of Dr. Harper's 3,000 to 4,000 patients were HealthSource subscribers, the consequences of the "without cause" termination of the provider relationship moved the conscience of the New Hampshire Supreme Court to reverse the trial court's dismissal of his claim. The Court held that Harper's factual allegations sufficiently alleged valid causes of action, including a claim that 1) any MCO provider agreement must be fair and consistent with the public interest, and 2) an MCO's termination decision must comport with an implied covenant of good faith and fair dealing, and may not be made for a reason that violates public policy. The Court wrote:

[†] To the same effect, highlighting the strength of California's "fair procedure doctrine" (and one which protects physicians and other individuals from arbitrary exclusion or expulsion from private organizations that substantially affect important economic interests) is *Ambrosino v. Metropolitan Life Insurance Co.*, 889 F. Supp. 438 (N.D. Cal. 1995) (California podiatrist with a history of short term chemical dependency problems terminated by MCO on 30 days notice without cause, with 15% of physician's patients insured by defendant MCO, had a common law right to fair procedure including a right not to be expelled from membership for reasons which are arbitrary, capricious *and/or contrary to public policy*). It would appear that the California decisions, and particularly the *Ambrosino* and *Delta Dental Plan* decisions, created the doctrinal foundation for the construction of the *Harper* doctrine by the New Hampshire Supreme Court.

> "... [T]he public interest and fundamental fairness demand that a health maintenance organization's decision to terminate its relationship with a particular physician must comport with the covenant of good faith and fair dealing and may not be made for a reason that is contrary to public policy.... A terminated physician is entitled to review of the termination decision under this standard, whether the termination was for cause, or without cause. ..."

The *Harper* Court's rationale was built on its view that the MCO-physician provider relationship was a special one that required the protection reserved in the law for other uniquely important legal relationships.

The first prong of the *Harper* Court's two-pronged special relationship theory focused on the special relationship between providers and payors created by the New Hampshire HMO licensure act. The Court noted that the Act sought to promote access to health care at competitive prices as a matter of "broad, generalized social and economic ... importance to New Hampshire citizens" and that provider agreements linking physicians with patients were vital operative elements in implementing that important public policy.

Second, the Court equated the MCO-provider relationship to those in which "... society values truthfulness in communications—above other competing interests ..." such as wife and husband, pastor and penitent, and physician and patient. Although it appears naively idealistic for the *Harper* Court to suggest that HMOs must treat their terminated providers with the openness that society expects from parties to uniquely confidential relationships, the Court did, in finding that a review process must accompany that termination, properly elevate the economic and personal significance of an MCO contractual termination for a physician to an appropriate due process plane.

The coalescence of the *Harper* and the *Napoletano* reversals, although from different jurisdictions, gives *Harper* practical significance for Connecticut physicians challenging MCO deselection decisions. Dr. Robert Napoletano's summary dismissal by CIGNA prompted his multicount claims of breach of contract, tortious interference with business expectancies, violations of the Connecticut Unfair Trade Practices Act (CUTPA), and the Connecticut Provider Network Act, *as well as the breach of an implied covenant of good faith and fair dealing,* but Superior Court Judge Jon C. Blue's opinion held that the claims "related to" ERISA plans and were thus preempted.

The Connecticut Supreme Court reversed and rejected this fortress-like MCO defense and held that the plaintiff's claims did not affect or prescribe the establishment, administration, regulation, or maintenance of the plans but related only to the enforcement of the plan, and were thus not preempted.

The reversal in *Napoletano* and *Hollis* opens the door to Connecticut physicians who seek to mount broad-based challenges to managed-care terminations and who can now pursue a wide variety of contract and misrepresentation claims, as well as a covenant of good faith and fair dealing claim, without facing the previously impregnable ERISA bar.

Not surprisingly, terminated providers have responded enthusiastically to the *Harper* precedent. Recently, several New Jersey psychologists terminated by a payor as being "managed-care incompatible," along with their state association, sued the payor, MCC Behavioral Care, alleging that MCC's use of its no-cause termination procedure was against public policy, was a breach of the provider agreements, and was fraudulent as to patients and providers. *New Jersey Psychological Association v. MCC Behavioral Care*, (N.J. Super. Ct., Law Div., No. MRS-L 1825-96; May 28, 1996).

The rationale of the *Harper* Court does not suggest that all "without cause" terminations are invalid. To prevail against an MCO, using the New Hampshire Supreme Court's rationale, a physician must demonstrate that the termination was, in fact, in bad faith or based on some factor that would render the decision contrary to public policy, perhaps akin to Dr. Harper's implied suggestion that the HMO's "skewing" of his own patients' records could affect their reliability and thus implicate patient care.

States, in the course of legislating protections against the arbitrary denials of coverage and medical services to MCO enrollees, have also recognized the need to protect physicians against arbitrary terminations of their provider agreements by MCOs. Seven states have either passed or are considering the adoption of legislation, similar to New York's recent enactment of an amendment to the Public Health Law (NYS CLS Pub. Health 4406-d). New York now requires health-care plans to disclose to health-care professionals the written application procedures and minimum qualification requirements which the health-care professionals must meet in order to be considered for provider participant status in the plan. Of more specific importance to New York managed-care panel physicians is the protection that they receive pursuant to the statutory amendment against arbitrary termination from the health-care panel. New York now prohibits a health-care plan from terminating a physician's provider participation agreement unless the plan provides written explanation of the reasons for the proposed contract termination as well as an opportunity for the physician to obtain a hearing that comports with certain notice and hearing protections.

The procedural protections imposed by the New York statute are patterned after the HCQIA in that they require the MCO to provide reasons for the proposed action. If a hearing is requested by the physician, the New York statute requires that the hearing be held within 30 days after the request and that the hearing panel be impartial and include at least one person who practices in the same discipline as a clinical peer.

The enactment of the New York statute, providing procedural protections and insuring that reasons for a physician's termination be delineated, indicates that the litigation instituted by Doctors Napoletano and Harper has assisted physicians in drawing back the curtain on the previously-darkened area of without cause MCO-provider deselections. And future litigation by courageous physicians and their counsel will now define the scope of this developing due process theory.

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Commentaries

Our Greatest Health Threat Might Be the FDA

On the threshold of extraordinary advancements in medical technology, U.S. pharmaceutical and medical device developers find themselves under attack by the excessive regulation of the Food and Drug Administration (FDA). Simultaneously, the FDA is discouraging development of new products and increasing the cost for companies to gain approval and market them.

It wasn't always this way. Under the Food, Drug and Cosmetic Act of 1938, companies had to submit a new drug application (NDA) before selling a new medicine. The NDA was to contain evidence that the drug was safe to use. If the FDA didn't accept or reject the application within 60 days, the drug was automatically approved.

In 1962 as a result of the thalidomide scare, Congress gave the FDA power to require companies to demonstrate a drug's efficacy as well as its safety, before approving its use. But, as the Cato Institute's Doug Bandow points out, effectiveness is best tested in the marketplace, as we see with all other manufactured products and devices. Bandow adds that making proof of efficacy part of the FDA's approval process "has greatly exacerbated the agency's natural bias against risk."

As a result of FDA efficacy regulation, the Center for the Study of Drug Development at Tufts University reports it takes an average of 15 years to get a drug approved by the FDA. Consequently, the cost of drug development has skyrocketed, increasing by more than 400 percent in the last 20 years. The Office of Technology Assessment tells us the cost of new drug development is now an average $394 million. Eighty-five percent of the cost of pharmaceutical development goes to complying with FDA regulations. This makes those regulations, in effect, a tax on investment in basic biomedical research—precisely the opposite of what is needed to stimulate research.

But current FDA policy has done more than slow down development of drugs and devices. It has cost the lives of many Americans. Of the 150 new drugs and vaccines approved by the FDA between 1990 and 1994, 61 percent were available first overseas.

- Dr. Louis Lasagna, director of Tufts University's Center for the Study of Drug Development, estimates the seven-year delay in the approval of beta blockers cost the lives of 119,000 Americans.
- 25,000 died of kidney cancer during the three and a half years it took the FDA to approve the new drug IL-2, even though it had already been approved for use in nine other countries.
- In 1985, the National Institutes of Health stopped a study on TPa because the study showed TPa was so effective in reducing deaths related to myocardial infarction it would be unethical to withhold it from volunteer patients. Yet it took another four years for FDA approval, costing 30,000 lives.
- Even though Tacrine has been safely used by humans here and around the world to treat Alzheimer's Disease, it took the FDA seven years to approve it.
- The chemotherapeutic agent Flutamide was available in Europe for years and was proven safe, but the FDA failed to approve it. As a result, the National Cancer Institute accused the FDA of being "mired in a 1960s philosophy of drug development, viewing all new agents as ...poisons."

Robert Goldberg of Brandeis University estimates FDA delays in allowing the marketing in the United States of drugs used safely and effectively elsewhere around the world have cost at least 200,000 American lives over the past 30 years.

What kind of reforms should Congress consider? Among those suggested are restricting FDA oversight to safety, leaving efficacy up to the marketplace, as recommended nearly 30 years ago by the Department of Health, Education and Welfare. A simple way to do this is to allow manufacturers to "opt out" of the efficacy approval process, by having a label affixed to such products saying something like: "Determined to be safe by the FDA, but the FDA has not reviewed the efficacy data and cannot make any claims to the efficacy of the drug as set forth in this product's label."

This would foster the development of independent certification labs—like Underwriter's Laboratories, a private non-profit organization that sets safety standards for various products, mostly electrical—to efficiently test product efficacy in a cost-effective manner.

Sam Kazman, of the Competitive Enterprise Institute, has a different suggestion: "Change the FDA's veto power over new drugs to a system of certification. Let the agency review safety and efficacy, but allow unapproved drugs, clearly labeled as such, to be available by prescription."

This would allow doctors, hospitals, and insurers the freedom to choose whether to rely on FDA approval, foreign certification, industry recommendation, or private sanction on a case-by-case basis.

Therefore, a patient with a serious illness, who doesn't have the luxury of time, might decide to use a drug that has not been FDA-approved. This is a decision that should rightly be made by the patient and the doctor, not a federal bureaucrat.

It all reduces to a familiar principle—doctors and patients need to be able to make decisions free from coercive third party interference.

The FDA was begun as a clearinghouse to certify the safety of medical agents and devices. It has evolved into a menacing meddler that might well be one of the greatest health threats Americans face as we enter the next millennium.

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HUMAN SERVICES ... UNIVERSITY OF MARYLAND BALTIMORE

The Surgeon's Role in Palliative Care

IN recent years there has been an explosion of interest in the nature of care at the end of life. Fundamental to the growth of this interest is the perception of a discrepancy between the type of care patients and families desire and what they receive. Further attention has been focused on this type of care by the growth of the hospice movement and its incorporation into mainstream medicine, demands for scrutiny and control of escalating health care costs, the AIDS epidemic, and the pressures of litigation and jurisprudence (including the issue of physician-assisted suicide).

Certainly the lay media and arts abound with treatments of death-related subjects. In health professions literature, the "medical media" during the past two decades, there has been nearly a threefold increase in articles regarding death and dying. Disappointingly, while a MEDLINE search from July 1991 to July 1996 reveals citations regarding: "palliative care"—2,847, "surgery"—1,822, "terminal care"—1,589, and "hospice"—317, only *two* articles combined "surgery/terminal care" and *none* "surgery/hospice."*

Much of this literature addresses shortcomings about the nature of medical care at the end of life.[1] Inadequacies in the educational and training programs of medical schools and specialties in presenting or teaching the elements of palliative care are also well documented.[2-3] As Cassel notes, the authoritative and widely used *Cecil Textbook of Medicine* contains only three pages devoted to treatment of patients in the terminal phase of illness out of more than 2,300 other pages.

One might ask why there appears to be a lack of interest among surgeons on the topic of palliative care: if surgeons have become, like oncologists and other specialists, so fixed on cure as an outcome that if they are not "doing" their specialty (that is, operating), they feel they have nothing to offer. Worse, could we come not only to believe our own unfavorable press, but also to live it? It may be that this is an appropriate time to re-examine our postures and practices, recognizing that our behaviors have an impact on every aspect of our relationships with patients throughout the course of their illness.

Beyond Cut and Sew

The choice of terminology is important. Palliation refers to easing of symptoms, not to modification of disease course; it is rooted in the definition "to lessen or improve without curing," and as such it is applicable across the whole spectrum of the patient's illness and the surgical encounter, irrespective of prognosis.

The word "terminal" is too limited to be of help. It is imprecise (does it mean days? weeks? months?), and ambiguous (does it refer to the disease? the patient's condition? the aims of care?). Focusing on it as a prognostication can be an uncomfortable and unnecessary distraction. As noted by Doyle and colleagues, there is an implied negativity and pacifism in use of the word terminal, which belies the definition of palliative care: "the active total care of the patient whose disease [may not be] responsive to curative treatment.[4] Control of pain, of other symptoms, and of psychological, social, and spiritual problems is paramount. The goal of palliative care is achievement of the best quality of life for patients. Many aspects of palliative care are applicable earlier in the course of the illness in conjunction with (other) treatment."[4] In short, palliation is always an essential component of care, but especially when cure is no longer a reasonable expectation.

The surgeon has much to offer for palliation—some help is manifested by his or her skills and knowledge, some by attitudes and discernment of duties. A great deal of it has been learned in our quest to decisively eradicate disease. (Long before Evarts Graham did the first successful pneumonectomy, many thousands were relieved by tapping effusions and draining empyemas.) Every sur-

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*In the *Bulletin of the American College of Surgeons,* 81(6):11, 1996, John W. Rowe, M.D., offers a brief, thoughtful discussion of palliative care, titled "Health care myths at the end of life."

geon is familiar with the palliation achieved by relieving the obstruction of a hollow viscus, or draining pus under pressure. Under other circumstances, stopping bleeding or treating draining wounds can offer significant relief from distressing symptoms. And as all discomfort is not physical, the anxiety of uncertainty can be relieved by safe return from the operating room, or even the establishment of a definitive diagnosis.

Familiarity with the usual course of disease and the pathophysiology involved are cornerstones of surgical judgment, as is familiarity with the operative options available. But our knowledge base should also include nonoperative, pharmacological, or minimally invasive techniques for relief of pain and other symptoms. As the recommendations of judgement, these too are remedies provided by the surgeon every bit as much as the ability or willingness to precisely cut and sew.

Reclaiming Ground

Sadly, it is well documented that pain and symptom management do not seem to be priorities, or are poorly done, in many of our hospitals and related health care facilities. Too often, straightforward postoperative pain management is relegated to "specials" (usually anesthesiologists), and so becomes a discontinuous part of surgical care and a neglected aspect of training. As with most disused functions, competence in this area then withers and interest in it wanes; the patient may perceive this lack of involvement as callousness.

This lost ground of care can be reclaimed, first by asserting the importance of pain control and insisting on its assessment as "the fifth vital sign." As the hospice experience has shown, one of the main barriers to pain control is not asking about it. This approach should be accompanied by familiarization with the principles of acute and chronic pain management, and recognizing the barriers posed by inadequate knowledge or incorrect information. These barriers reinforce the attitudes of opiophobia in practitioners and patients, and help perpetuate the myths regarding such overblown concerns as addiction and respiratory depression. Finally, by commitment to the achievement of pain and symptom control in partnership with the patient, the surgeon may avoid the pitfall of the flawed relationship marked by disbelief, disinterest, or fear of abandonment.

To achieve these goals, they must be made part of the training of students and residents, taught in formal curricula in the preclinical classroom and clinically at the bedside, and competency in their achievement assessed. The American Board of Internal Medicine has embarked on such an undertaking and other boards should follow.[5] Hospital-based palliative care services can provide a locus for this consultative teaching, utilizing "care paths" and protocols to provide plans of care and clinical excellence that can be inculcated as part of a hospital "culture."

Surgical judgment is also affected by unfamiliarity with what palliation may be possible, or how to achieve it, short of operative intervention. This dichotomy between the surgical and palliative care/hospice experience is no doubt in part responsible for the discomforting number of procedures, often performed in the last weeks of life, which merely add to the burden of dying or squander valuable remaining time in hospitalization or convalescence. These procedures include those that are disguised as facilitating "life" support, but that truly only serve "function" support. Such procedures, in the guise of "doing something," become technologic substitutions for what often can be achieved by much simpler and more comfortable means.

In point of fact, patients who are no longer eating or drinking can be kept very comfortable by maintaining oral hygiene and mucous membrane moistness, without percutaneous endoscopic gastrostomy or Dobhoff tubes, without central catheters or intravenous fluids. Hyperalimentation, and even enteral feedings per se, have scant impact on longevity or outcome; fluids run at 40cc per hour for hydration. While they may keep the utilization review wolf from the door, ultimately they only result in increased interstitial water in the soft tissues and alveoli, adding to general discomfort and dyspnea. Air hunger and dyspnea can often be relieved by judicious physical or pharmacologic interventions, without resorting to intubation or tracheostomy.

Stemming Distractions

Surrounded by technology and schooled in its use, it is understandable that we resort to it. Unfortunately, such interventions often serve as distractions that skirt deeper, troublesome, or discomfiting issues. These concerns often involve the psychosocial or spiritual gestalt of the patient facing life-limiting illness, or the surgeon entrusted with his or her care. They may reflect the patient's fears of an uncertain future, of loss of function or worth, of existential limbo, of abandonment. Perhaps feeling the discomfort of being untrained in dealing with such issues, perhaps sensing professional inadequacy, or perhaps simply recognizing the plight of shared mortality, the instinct is to emotionally insulate oneself in a surgical activity, or to physically disengage by referral elsewhere.

Many of the skills needed for dealing with such issues can be learned. They are based on a heightened sensitivity to the issues of quality of life, whether or not at the end of life, as determined by the patient. Understanding them bespeaks a process of dialogue, sensitive truth-telling, realistic prognostication; truly informed consent connotes not merely procedural assent, but commitment to that understanding by both patient and surgeon. And as today's physician does not need something else to feel guilty, inadequate, or coerced about, other resources do exist to assist him or her. Especially when accessed well before the phase of active dying, hospice services offer not only a demonstration of the efficacy of palliative care, but also provide the surgeon with the opportunity to remain part of an interdisciplinary team whose commitment complement the surgeon's.

Few would question the value of the College's Advanced Trauma Life Support (ATLS) Course has had in heightening awareness and increasing skills related to care of the trauma patient, with resultant demonstrable improvement in quality and outcomes. A similar recognition should be given to the unique needs of patients with unrelieved symptoms or incurable illness by focusing attention on pain/symptom management and appropriate interventions. In addition to an ATLS-style curriculum, increased attention at conventions, seminars, and in the surgical media should be sought. Education of our students, residents, and fellows about techniques of care and the philosophy underlying them would provide the most promising future. The American Board of Internal Medicine has already made an ambitious and laudable start with end-of-life care education. We, as surgeons, should do likewise.

Control of Being

Independent of prognosis, the unique role the surgeon plays in the care of the patient is rooted in the tenor established by the operative experience. From the patient's perspective, few of life's experiences equal that of facing the uncertainty of diagnosis or of giving up control of corporeal being—intensely personal and threatening encounters that often take place in perceptibly impersonal and hostile environments.

The trust inherent in the relationship and the intimacy of the surgical encounter forge a bond between surgeon and patient that can endure long after therapy has shown itself to be unsuccessful or futile. For the patient, the bond with the surgeon is arguably as valuable as the therapy itself; it may even become a therapy, for it eases the patient's fears of abandonment and isolation. For the surgeon, recognition and preservation of its existence may help dull the sense of regret or inadequacy felt when operative therapy does not or cannot produce cure. Remaining a presence in the patient's life, at a time when he or she is facing rupture of all relationships, can be a balm to both patient and surgeon.

Ultimately, some of what the surgeon brings to the patient is what all doctors bring—the application of a body of knowledge or set of skills to treat illness. Whether or not cure is a reasonable expectation, elements of the surgeon's knowledge and skills are applicable in relieving distress and alleviating suffering. But more importantly, the surgeon brings a basic optimism and primal posture against indecision and hopelessness. The surgeon brings a unique history with the patient, and if he or she remains engaged, the opportunity to infuse fulfillment of his duties of care with humanity.

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Reprinted with permission of the *Bulletin of the American College of Surgeons*, April 1997 15-17,48. ROBERT A. MILCH, M.D., medical director, Hospice Buffalo, Buffalo, New York; GEOFFREY P. DUNN, M.D., medical director, Great Lakes Hospice, Erie, Penn.

Changes in the Doctor-Patient Relationship: An Impediment to Patient Care

Being older and retired from active practice has the advantage of being able to look back at the profession of medicine during the latter half of the 20 century and compare it realistically with what is taking place in medical care now. Basic changes in the doctor -patient relationship may alter the profession of medicine significantly in the future. These alterations need to be explored in order to give direction to attempts to restore the one-on-one bond between the doctor and the patient, a relationship that is a most important factor in the delivery of health care that is efficient and mutually satisfying.

In the 1940s the panoply of specialty medical practice was getting a foothold through hospital training programs, particularly those with academic relationships, abetted by the need to qualify for specialty board certification through specified time spent in training and the board examination process. It was not easy at that time because reimbursement for house officers was minimal. Fortunately for some veterans of World War II, the GI Bill provided stipends that were especially helpful to those who were married and had children. Others relied on family support for enough to get by on.

After completion of training. In the early 1950s, most of us established solo practices in communities of our choice. Groups and partnerships were rare. Advertising was limited to a single brief announcement of the opening of a medical practice. Anything more than that was considered unethical.

During those days, junior attending surgeons on the staff of the Danbury Hospital were required to serve time on the 'staff' service. This meant that we took care of the indigent poor of the community *pro bono* as part of our responsibility inherent in hospital staff membership. This was prior to the institution of Medicare so that many of the retired elderly who were impoverished were taken care of by junior staff members willingly and without compensation. We were also required to assist senior attending surgeons in the OR as an additional staff responsibility without charging fees for such services.

Office calls were $5 in those days. An appendectomy or herniorraphy were $125 including pre- and post-op visits. A cholecystectomy was $225. I did a pneumonectomy for carcinoma of the lung. I charged $350. These prices have increased by a minimum of 10 times and then some since then. This increase in the cost of medical care has followed the general rise in the cost of living over the past 40 years. A four bedroom, two bath, 2,400 square foot house that cost about $30,000 in those days would go for $300,000 plus today.

The Era of Indemnity Medical Insurance: Rising Costs of Specialization and High Technology

The advent of indemnity medical-care insurance, including Medicare, during and following the 1950s and 1960s encouraged the growth and development of sophisticated specialty medical services and a sharp increase in hospital-based diagnostic and treatment technologies, ie, laboratory studies, nuclear medicine, ultrasound studies, and radiological advances including angiography and the computerized tomographic scan. Full reimbursement for the cost of services allowed an unbridled expansion of technology which then upped the cost of care due to the imperative that it be used. Technology-driven diagnostic procedures and techniques have tended to replace careful history taking, thorough physical examination, and basic laboratory and simple x-ray studies that were the fundamentals of medical assessment relied upon to arrive at an accurate clinical diagnosis. It is true that technology has reduced the necessity for exploratory laparotomy to arrive at a definitive diagnosis and to appraise the extent of pathology and whether or not the lesion could be resected. It is questionable, though, that noninvasive, highly sophisticated diagnostic procedures have reduced overall cost, especially when surgical assessment and definitive surgery are required subsequent to their use in many instances anyway.

The last 30 years witnessed remarkable growth and diversification not only in the realm of the surgical subspecialties but also in the field of internal medicine. Gastroenterology, nephrology, cardiology, endocrinology, rheumatology, pulmonology, hematology, and neurology are niches in medicine requiring singular expertise. Specialized technologies and procedures such as endoscopy, cardiac and coronary artery evaluations, etc. have increased the cost of such highly sophisticated medicine. The high quality of this kind of care is indisputable. The well-insured patient had few if any complaints because the bills were paid without hesitation or questioning by third parties. Medicare payment schedules were acceptable to the majority of physicians. What was most important to both patient and doctor was that decisions regarding diagnostic and treatment approaches were left to the discretion of the doctor with the informed consent of the patient. The third-party payor was peripheral to this process for the most part as long as what was proposed to be done was customary and in accordance with existing standards of care.

This relationship permitted the comfortable exercise of the basic ethos of medicine—to focus upon and care for the patient with devotion. There were few impediments to the fulfillment of this basic professional obligation. The link between doctor and patient was just that—*doctor-patient*—with nothing in between.

Three Changes in the Doctor-Patient Relationship

1. During this remarkable period of growth and diversification of medical services, coupled with the conspicuous economic success of most physicians, an intrusion into the beneficent link between the doctor and the patient appeared with the development and burgeoning of law suits instituted by patients claiming injury due to medical malpractice. This phenomenon drove medical costs upward sharply because of dramatic rise in liability insurance premiums adding to practice overhead. The surgical specialties and obstetrics and gynecology were especially hard hit. It became necessary to cover the bases by obtaining a wide range of exotic tests and documentation to ward off any possibility of being deemed negligent if outcomes of care were less than satisfactory. Informed consent had to include the extremes of adverse possibilities. It is a wonder that anyone would dare to undergo any high-risk procedure no matter how necessary, and it is also a wonder that the surgeon would carry it out knowing that a law suit waited upon a poor result that may have been inevitable statistically. I knew highly skilled colleagues who were driven from practice by the psychic trauma of a malpractice law suit that implied incompetence

on their part. The confidence and trust intrinsic to the bond between doctor and patient was assailed by suspicion and hostility by both parties in many cases.

The simple relationship of doctor-patient was altered by the imposition of the external negative and destructive factor of *malpractice litigation.* The relationship became:

doctor—malpractice litigation—patient.

2. There has been another impediment placed in the midst of this most basic and fundamental relationship. This imposition is further straining the relationship of doctor and patient and interfering with the practice of good medicine.
   - The physician, by joining the list of providers of a managed-care entity, becomes subject to authority that may interfere with physician autonomy. Examples are the arguments over the right of the physician to suggest alternatives to care that are not included in the care plan of the managed-care organization. Limitations on prescribed pharmaceuticals are now being imposed, and the physician may be censured for prescribing drugs other than those in the pharmacopoeia of the managed-care entity. Recently the physician may also stand to lose remuneration if a monetary *allowance* for prescribed drugs is exceeded.
   - The managed-care organization, by limiting its slate of providers, has immense economic power over those professionals who are enrolled. Many of these entities require physician members to waive their right to confidentiality regarding unadjudicated complaints against them to the State Licensing authorities and to the Department of Medical Quality Assurance. This includes allowing release of information regarding their participation in the Physician Health Program if they have been found to be chemically dependent and are in treatment. This information could then be used to justify denial of enrollment or removal of the physician from the managed-care physician list.
   - The physician is forced to abide by the managed-care entities and Medicare limitations on the length of time a patient spends in the expensive hospital environment. Diagnostic Related Groups specify the number of days allowed for hospitalization in respect to payment by Medicare, for instance. Longer hospital stays increase hospital costs that are not recoverable. Managed care has followed suit with even more draconian and severe limitations on in-hospital treatment. As an example, the elderly mother of a close acquaintance underwent hip replacement. This was followed by a myocardial infarction. Shortly after this event and before the cardiac condition had stabilized, the patient was transferred to a nursing facility where extension of the infarct took place, immediately necessitating rehospitalization in critical condition. The pressure to accommodate patient care in hospital to the limits of time imposed by Medicare and managed-care entities may be harmful if not lethal in some cases.
3. Because of the economic pressure on hospitals to curtail length of stay, closely assessed by "quality assurance" monitors, the physician once again finds another party, the hospital, standing between the doctor and the patient. The relationship then becomes:

doctor—malpractice litigation—
managed care—hospital—patient.

No wonder the physician-patient relationship is suffering. It is so widely separated by interfering factors that it reminds me of the Sistine Chapel ceiling fresco by Michaelangelo in which God is holding out his hand to Man and their fingertips do not quite touch. Supportive, compassionate care on a one-to-one basis is difficult when complicated by the necessity to get the okay for the rendering of any extraordinary medical services, including referral to specialists, from a bureaucracy sensitive chiefly to the economics involved. Delay, excessive paperwork, and the possibility of denial of what is considered appropriate and essential to a patient's welfare become frustrating to the physician attempting to perform his or her duties in a professional manner. Pressure to limit hospitalization following surgery increases the risks of complications relating to reinstitution of bowel and bladder activity in abdominal procedures, including those done via the laparoscope. Inadequate management of postoperative pain is not uncommon. A physician colleague recently had extensive arthroscopic knee surgery. He was sent home that afternoon but was forced to call an ambulance that evening to take him to the emergency department for pain relief treatment. He had been given a codeine analog which failed to provide any relief. Only with reluctance was morphine administered in a dosage adequate to lessen his distress.

The imposition of these bureaucratic *walls* between the doctor and the patient can only be detrimental to the establishment of mutual trust and confidence in that relationship. Suspicion, fear, and hostility are engendered bv clinical decisions inappropriate to the best interests of the patient and fostered by pressures on the physician applied by intervening third- and fourth-party providers—managed- care systems and hospitals.

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Possible Solutions

How will this end? The move towards consolidation with the formation of doctor's "unions" is an example of the realization that forces must be gathered to resist unprofessional intrusions into the way in which doctors practice medicine. This coming together of colleagues will be viewed as self-serving unless it is patient focused and unless the goal is *solely* to improve medical care. It will also be difficult. The selective enrollment of colleagues in managed-care organizations has served to pit one against another. There is an old saying, "the one thing that two physicians can agree on is what the third physician should give to the Red Cross." This competitive feature of participation may have been deliberately intended to divide us. Perhaps it would be better to come together as a *guild* rather than a union. The word "union" possesses a pejorative, extremely adversarial connotation. This means that economic issues affecting the profession must be considered *secondary* to the preservation of a medical-care system that focuses primarily on the care rendered to the sick in our society. If this goal is clearly defined, then society as a whole will support alterations in the medical-care system proposed by doctors who have the best interests at heart of those they serve.

It is imperative that the profession of medicine assume a major role in decisions regarding the future of medical care in this country. If our ethos continues to focus on what is best for our patients, we will have a substantial voice in this process. Our voice will be supported by those whom we serve—our patients. If we remain concerned with ourselves primarily, we will fail to be heard, fail to be believed, and fail to lead.

Henry N. Blansfield, M.D.
Danbury

Physically Challenged Golf Association

The Physically Challenged Golf Association was established in 1995 with the mission to promote the game of golf to the physically challenged (ie, those afflicted by stroke, amputation, total joint replacement, neck or back surgery, musculo-skeletal diseases, etc.) The association recently received nonprofit status and has been endorsed by the Connecticut State Medical Society—Sports Medicine, Connecticut PGA, and the National Amputee Golf Association. With the help of the Connecticut PGA several clinics are being conducted. Help is needed at any of the clinics. Please call Kathleen Hickey Kane, MS., PT., ATC, for more information at the Connecticut Chapter of the Physically Challenged Golf Association at (860) 828-6446 or write P.O. Box 27, East Berlin, Connecticut.

Racebrook Country Club
Orange, Connecticut
Nine holes/golf clinic: 4 October 1997—2:30 p.m.

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50 Years Ago
From *The Connecticut State Medical Journal*
August 1947

The Swing of the Pendulum

For countless generations, probably since the medical twins Ars and Scientia were in their swaddling clothes, the pendulum of professional opinion has swung in a wide arc. There have always been forceful and opinionated men in medicine and always will be, for after all, the profession is made up of human beings with all their excellencies and all their failings. Luckily the forceful and opinionated not infrequently have promulgated doctrines which were essentially sound but, as in other fields of human endeavor, the faddists, with their one-track minds, have sometimes been the noisiest, the most articulate and the most positive. When these traits have been combined with persuasiveness these undesirables have not infrequently led the rank and file of the profession astray. In short, there have always been fashions in Medicine just as in spring bonnets, and the medical modes have sometimes been just as bizarre as the millinery. One has only to recall as striking examples the medicine of the Eighteenth Century with its flood of metaphysical speculations or the era of bleeding, blistering, purging and puking which ended barely a century ago.

Luckily the profession has always attracted some men with the true scientific spirit: keen, critical, and with a traditionally Missourian scepticism. These have leavened the mass to some extent but, in spite of them, there has always been a tendency for the pendulum to swing too far in some matters. Evidences of this can be found not only in medical literature but even in the graveyard. Did not the great clinician Graves leave chiseled on his tombstone "I fed fevers," obvious evidence that in his day most practitioners didn't? But, despite fads and fancies, there has always been a substantial substratum of practitioners with the saving grace of common sense and, needless to say, there have always been those with keen powers of observation and good judgment who have tempered prevailing ideas in the fire of experience. Furthermore, even in the most freakish eras, there have been those who made new and valuable discoveries.

There are one or two points to be noted in passing judgment on these common phenomena: first we must remember that new and important contributions in any science, and medicine is in part a science, are, so to speak, in the air. Great discoveries rarely originate wholly anew in the mind of a single individual; there is a series of lesser but cognate observations which precedes them. Some alert and erudite thinker synthesises these observations and adds the spark which combines them into a new principle. Conversely it should be noted that the ordinary run of speculations and discoveries is limited by the knowledge of the time and this, of course, limits practical procedures based on them. Finally we have to deal with human nature, of which one cynic has remarked that "the only thing predictable about it is that it is unpredictable." Human beings, even those trained in science, are a curious mixture of credulity and skepticism. New remedies, for example, are at first usually embraced with enthusiasm and often misused, partly because they are ballyhooed by advertising, and an advertising agent who does not deal in superlatives is almost as rare as the great auk. Then, with experience, comes a stage of reaction; unpleasant side effects are discovered, and finally, after months or more often years of experience, the true indications for the remedy are established.

It is interesting for one who has followed the progress of medicine for more than half a century to note how the pendulum of opinion swings from one extreme to the other. Take for example the question of the care and feeding of infants: the great-grandparents of the present generation of young mothers brought up their children more or less by guess and by gosh; their grandmothers relied on the admirable dicta of L. Emmett Holt; their

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Reprinted from the *Connecticut State Medical Journal*, August 1947.

mothers lived during the period of rigid formulae and feeding by time table, and now after a brief period of liberal infant feeding with almost anything but corn beef and cabbage, another laissez faire begins to rear its head. But, after all, the results of these extreme pendular excursions are not all bad; each swing, leaves behind some modicum of new and valuable experience and, in the long run, it is better to have wide excursions than none at all.

G.B.

A Significant Development

Periodic physical examinations of presumably healthy persons have long been advocated by public health associations and life insurance companies. The comparatively recent development of the so-called Detection Clinic as an aid in the early diagnosis of cancer is an attempt to answer a problem which is the concern of every practicing physician and, also, to satisfy a public demand which is increasing in great proportion. In Connecticut two clinics of this kind are now functioning and their work has already demonstrated the usefulness of such endeavor, not only as an aid in the early diagnosis of malignancy also but also in discovering other lesions in persons who are presumably healthy.

While it is true that all of the diagnostic procedures which are carried out in such clinics can be duplicated by the practicing physician, certain laboratory tests, such as the cytologic test from the vaginal smear, require a special experience for their interpretation. Another diagnostic procedure which has been added by one metropolitan clinic is the fluoroscopic examination of the stomach in patients over 45 years of age without gastric symptoms, and a complete g.i. series in patients with such symptoms. This same clinic recently has added as routine a proctoscopic examination and, in a total of 299 individuals without symptoms, there was an incidence of 5 cancers and 18 precancerous polyps. The establishment of such clinics represents a significant trend in medical practice and the response of the public in giving financial backing to such enterprise may be accepted as a measure of the great public confidence in medical science. This is a satisfying circumstance, but it must be accepted with a certain humility, for the part that physicians must play in future developments is a very real and demanding one.

In a recent report by Dr. E. S. L'Esperance on the role of the Prevention Clinics in the early diagnosis of cancer this author summarized this experience as follows:

"There are certain conclusions which are evident after ten years of this cautious experiment. The phenomenal growth illustrates conclusively the need of such routine periodic complete physical examinations as one of the most practical methods to meet the problem of cancer control and emphasizes the possibilities of preventive medicine. Furthermore, one of the important aspects of these clinics is the ability to allay the fear of cancer which may result in true cancerphobia. After a complete examination the statement that no evidence of cancer is found is the most valuable angles of our work."

Our Aging Patients*

The reduced mortality of infectious diseases in the past half century has greatly increased the number of elderly persons in the population. This trend was well under way in 1940 when 26.5 per cent of the American people were over forty-five. By 1980 it is estimated that 50 per cent will have reached this age. The specific implications of this population shift upon medical practice in the next ten years have recently been thrown into focus by C. Ward Crampton, chairman of the Subcommittee on Geriatrics and Gerontology of the Public Health Committee of the Medical Society of the County of New York. Crampton points out that geriatrics will never become a clearly delineated specialty for older persons are subject to the same diseases as younger ones. and the services of all specialties except pediatrics are necessary for their treatment. Rather, an awareness of the special problems of older people becomes essential for all practitioners of medicine and surgery.

Crampton develops at some length the necessity for recognizing various kinds of aging. He emphasizes particularly the difference between chronological age and physiological age, the latter being dependent upon endocrine and metabolic factors, some of which are subject to modification. He also devotes attention to pathological processes, such as chronic foci of infection which may in some instances contribute to the aging process.

To understand the psychologic problem of aging is perhaps the most difficult step in attaining the geriatric point of view. Older persons are satisfied with very little. As instinctive drives of earlier years lose their force conflicts wane, and psychoneurotic symptoms tend to die away. On the other hand there is often a vague sense of insecurity and loneliness which is minimized by a familiar environment. Most physicians are well acquainted with the old codger who gets along fairly well with a family retainer in a dingy old Victorian monstrosity but who becomes delirious or paranoid in the sunny southwest corner of a sparkling clean but unfamiliar nursing home. The evaluation of senility is important to the geriatrically minded physician who often must decide upon the date of a patient's retirement. It is important to comprehend the mental state of a patient about to have a cataract operation or a prostatectomy, and it is essential to choose sedatives with caution lest they increase rather than allay restlessness. Bromides often accumulate in older persons with impaired renal function. Likewise the effects of diuretics must be observed, not upon urinary output alone, but also upon the mental state, which is often confused by too rapid dehydration.

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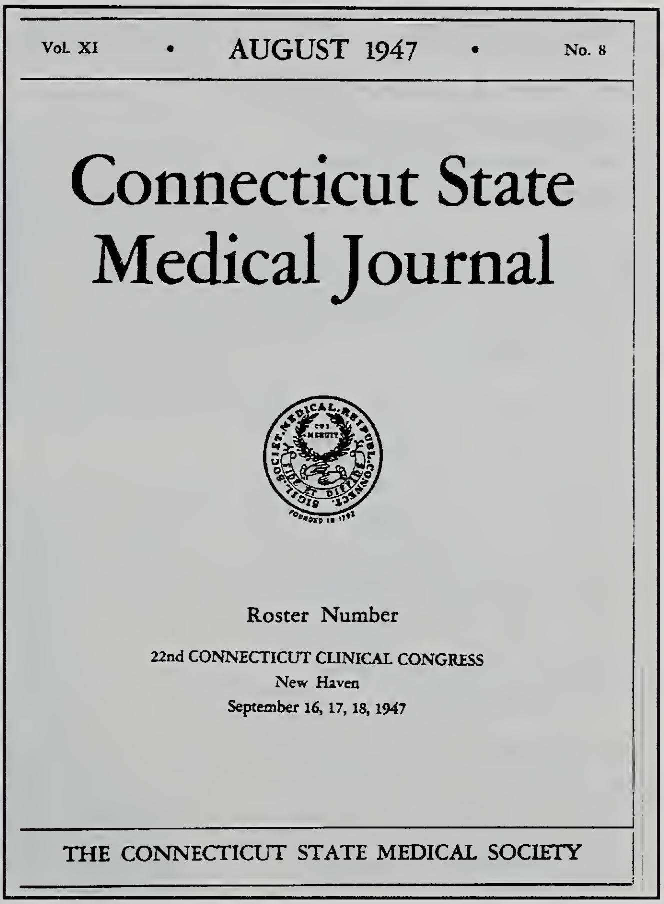
*Crampton, C.W. "What Geriatrics Means to the Medical Profession." New York Medicine, 3:21-26, 1947.

It is easy to look upon older persons as "crocks" and difficult to comprehend the problems which they face. The middle aged physician or nurse has been through childhood and adolescence, so that these phases of life are not entirely foreign to the understanding. Geriatrics require imagination, and the physician who can apply this priceless quality to the care of older persons has an established future in service and personal success.

New Britain Medical Group

Seven New Britain physicians have organized Connecticut's first medical-practice group. To be known as the New Britain Medical Group, the new organization began functioning on June 2.

Offices have been established at 32 Grove Hill, the former residence of Mrs. Florence Gates Judd. The property was recently purchased by the group, which is represented by the law firm of Ericson, Politis, and Gleason. The group membership comprises Dr. Donald A. Bristoll, obstetrics and gynecology; Dr. Bliss B. Clark, surgery; Dr. Louis W. Daley, otolaryngology; Dr. George P. Perakos, internal medicine and gastro-enterology; Dr. John C. White, internal medicine and cardiology; Dr. Dwight E. Wilson, urology; and Dr. Emmett C. Rankin. All members of the American Medical Association, the physicians forming the group are associates on the staff of the New Britain General Hospital.



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Roster Number

22nd CONNECTICUT CLINICAL CONGRESS
New Haven
September 16, 17, 18, 1947

THE CONNECTICUT STATE MEDICAL SOCIETY

Connecticut Medical Examining Board

RE: Declaratory Ruling Hearing on the Use of Lasers for Hair Removal

RULING ON REQUEST FOR CONTINUANCE

The Connecticut State Medical Society has requested a continuance of the Declaratory Ruling hearing scheduled for August 19, 1997, in the above-referenced matter. The Connecticut Medical Examining Board will not continue the August 19, 1997 hearing, but will schedule an additional one hour hearing on Tuesday, September 16, 1997 at 1:00 p.m. at the Department of Public Health, 410 Capitol Avenue, Hartford, Connecticut, in Conference Room 1 on the second floor. The Connecticut State Medical Society shall pre-file all testimony and documentary evidence in writing, and shall submit same to all parties and to the Board with eleven copies by September 5, 1997. Filings to be submitted to the Board shall be sent to:

Connecticut Medical Examing Board
c/o Kathie J. Pirolo, Board Liaison
Department of Public Health, MS #13ADJ
P.O. Box 340308, Hartford, CT 06134-0308

WOMEN IN MEDICINE MONTH
September Is

As physicians, our hearts have always been with our patients. Our mission saving lives.

Once this was enough.

Today, however, we are called upon to save more than our patients' lives. We are called upon to save their rights as well.

That's why I'm asking you to support the American Medical Association (AMA) as well as your state and local medical associations.

Together, we can achieve real and lasting changes. Already we have made great strides on behalf of our patients. Working together, we are educating a nation about the dangers of "gag" clauses, developing patient protection measures, and launching a wide spectrum of public health initiatives.

During Women In Medicine Month, we gratefully acknowledge the participation and support of all our female members. The AMA now has more women physicians than any other medical association. We encourage all female physicians, residents, and medical students to become members. So please, join now. Your patients' future rights and your entire profession depend on your commitment today.

"Let's keep our commitment where our hearts are. Behind our patients."

Support your patients and your profession. Join the AMA, and your state and county medical associations.

Nancy Wilson Dickey, MD
President - Elect
American Medical Association

American Medical Association
Physicians dedicated to the health of America

THE PRESIDENT'S PAGE

Federation or Union

I have written earlier, if not eloquently at least in some length, of the essential need for coordinated efforts from all rooms in the house of the Federation.

As managed-care markets have matured over the past several years, there has been much tinkering with the model. The offered programs and the rules of engagement for physicians change annually, semi-annually, sometimes from month to month.

Despite all, we as physicians have the immutable obligation to provide our patients with the highest quality professional care that is possible as determined by our training, skill, and diligence.

Third-party payers become ever more intrusive in their dealings with us not just in the area of compensation but encroaching into our very standards of practice. As the frustrations of maintaining practice standards and reasonable compensation for services rendered become ever greater it is not surprising that in casting about for avenues of relief the concept of coordinated concerted action to achieve common goals through organization arises.

There is nothing new here. Medicine has been organized for generations. The purpose of our organizations has been primarily educational and fraternal to be sure, but we are all comfortable in them and with their stated objectives.

Organizing for the purpose of collective bargaining is also not a new concept. It almost seems that as long as I have been in practice there has been interest in this type of activity. Not just in other areas of the country either, but right here in our own state. As experience in dealing with this intrusive third-party bureaucracy expands so I imagine does the appeal to each of us of exploring options to cope in this frustrating, sometimes intimidating, environment.

Make no mistake though. Achieving the right to bargain collectively in the case of independently practicing physicians is extremely unlikely given current federal statutes and their interpretation. Present antitrust law expressly prohibits providers of goods or services from collectively engaging in any activity having the intent or the effect of reducing price competition. In a recent letter the Federal Trade Commission in approving the formation of an alternative care group's union held that there was no restraint of trade under Section 5 of the Federal Trade Commission Act precisely because there was not an effort by the union collectively to negotiate fees for its members. The assistant director of health care reiterated the commission's long-standing position that under the Sherman Anti-trust Act it is unlawful price fixing for independent health-care professionals to negotiate collectively.

If you think about it, we all really are aware of this. We have joined IPAs for years now mainly to provide ourselves with a negotiating vehicle acceptable within the boundaries of these federal statutes. No one, including an AFL-CIO affiliated union, can fully address the concerns of self-employed physicians in independent practice on these issues of practice viability.

The American Medical Association has been at work on these issues of concern to us since the early 1980s. The charge has always been to seek means to assure the fair representation of physicians in matters of quality access and reimbursement of medical care. The result now is the formation of the AMA Division of Private Sector Representation within the Group on Health Care Advocacy. Services will be offered in partnership with state, county, and specialty societies and operate as a central part of the Advocacy Resource Center. The Division will assist individual physicians as well as groups on a host of quality of care issues including payment problems. It is also charged to employ aggressively AMA lobbying clout in addressing restrictions imposed by the current antitrust laws.

As much as some of us would have it otherwise, in our present situation and until we can persuade Washington to provide us legislative relief, we must determine who is most likely to represent the totality of our interests broadly construed. In such an instance our choice seems clear—The Federation.

Stanley J. Keating, Jr., M.D.
President

A is for Apple,
B is for Ball,
C is for Cancer.
Cancer?

Each year, more than 6,000 children like Adam learn all about cancer and other catastrophic illnesses when they're stricken with deadly diseases. Fortunately, these children have a fighting chance at surviving cancer — the No. 1 killer disease of children — because of strides St. Jude doctors and scientists are making every day in treatment and research. With your support, St. Jude Children's Research Hospital is helping children all over the world live.

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The Flight from Science and Common Sense

ROBERT U. MASSEY, M.D.

> ... one and all of you will have to face the ordeal of every student in this generation who sooner or later tries to mix the waters of science with the oil of faith. You can have a great deal of both if you only keep them separate.
>
> William Osler, *The Master-word in Medicine*

WILLIAM OSLER had "a great deal of both" and for the most part did keep them separate. Although his essays are rich in Biblical quotations and religious references, he never used the supernatural to explain his science. In his 1904 Ingersol Lecture, "Science and Immortality," he came close, too close thought many of his colleagues. but he did in the end "keep them separate."

A recent Annals of the New York Academy of Science, *The Flight from Science and Reason*,[1] opens with an introductory remark (Greenberg HM, pp. ix-xi) that "Medicine Took an Earlier Flight," from reason and professionalism, that is, when it succumbed to the for-profit HMOs "with their ten-million-dollar CEOs, paying out sixty-eight cents on the dollar for care, ..." In other words, medicine is giving up its science and its art and its "unique professional ethic, ... and the doctor will measure his life in degrees of compliance with cost-driven algorithms and will hone his skills to reduce an office visit to seven minutes."

But the burden of this NYAS Annals is the warning that not only medicine and the biomedical sciences, but all of science, history, political science, the humanities, religion, and education are losing the battle against unreason, pseudoscience, romanticism, and scientific illiteracy, as well as against politics and New Age sentimentalism and the all-powerful marketplace. Broad and sweeping generalizations are rarely sound, but many of the 40 or so contributors to this NYAS Annals lump these attacks against reason and common sense under the term "postmodernism," and date it roughly from the end of World War II, and more precisely to about 1965, in the terrible 60s whose youthful trouble makers now have tenure! I suspect it began earlier in the century. When I was an undergraduate we were babbling about "non-Aristotelian logic," and T.S. Eliot, when he was a graduate student in philosophy at Harvard, concluded that reality was a convention. (He later said he didn't understand what he meant.) William James, physician, psychologist, and philosopher at Harvard was writing such things in 1879 as, "The belief creates its verification. The thought becomes literally father to the fact ...," although his common sense American pragmatism came to rescue him from these flights of fancy more often than not.

Our times will not be clearly understood for another 75 years, and perhaps not even then, but for now, we are warned, the barbarians are inside the gates; worse, they have taken up residence in those ancient defenders of the good, the true, and the beautiful, our universities and colleges. For a frightening account of what is happening in academia, pick up a copy of *Higher Superstition: The Academic Left and Its Quarrels with Science* by Paul Gross and Norman Levitt.

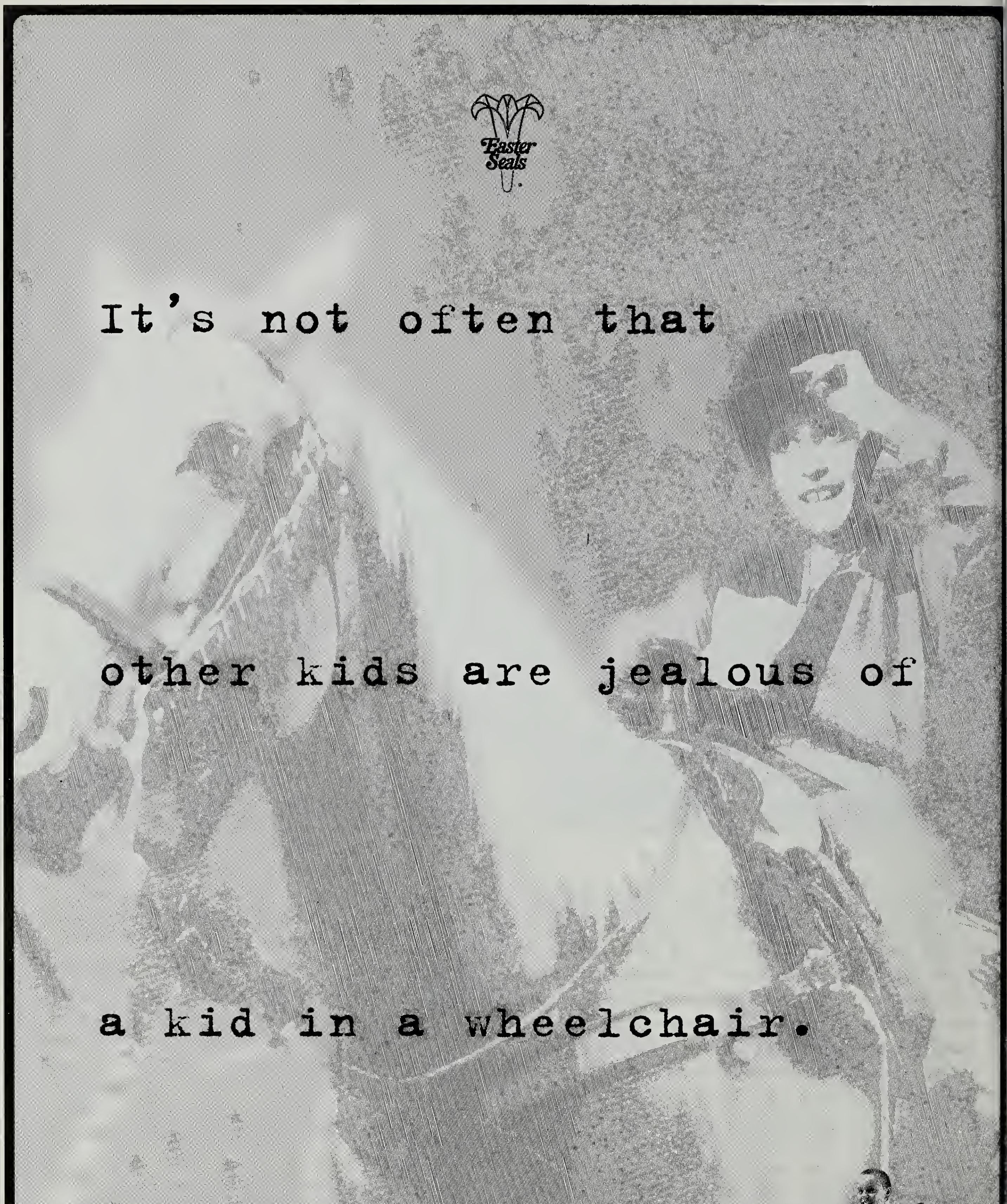
There is even a journal, *Alternative Therapies,* and an NIH Office of Alternative Medicine supported by 12.5 million tax dollars and with an advisory committee made up, with one exception, "exclusively of quackery supporters." The journal's editor stated that double-blind studies should not be used to test alternative therapies. "[These therapies'] action cannot be specified, quantified, and controlled in double-blind designs." Such studies, he wrote, "... strips them of intrinsic qualities that are part of their power." I would guess he is right.

Thirty-four years ago Richard Hofstadter fired a warning shot with his *Anti-intellectualism in American Life,* and before that, yet after Sputnik was launched into orbit, the biochemist and Harvard president James B. Conant headed an effort to improve science education in American high schools. Yet now we have Afrocentrism and Feminist Epistemology and Textual Deconstruction along with holistic, orthomolecular, and nontraditional medicine; truly a flight from science and reason. A visit to the medicine and health section of your local bookstore will convince you how far we have strayed from good sense. Add to that *health-maintenance* (imagine!) organizations, and the nonsense is complete

REFERENCE

1. Gross PR, Levitt N, Lewis MW, eds: *The Flight from Science and Reason,* New York: The New York Academy of Science. 1996.

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.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It's not often that
other kids are jealous of
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For Brandon Stein, who has cerebral palsy, the benefits of the Easter Seals therapeutic horseback riding program go far beyond muscle stretching and control. He's gained freedom. Mobility. And the chance to do something other kids envy. Thanks to people like you, Brandon and others with disabilities have access to therapy, support and other services that help them live life with independence, dignity, equality and hope. Support Easter Seals. Give ability a chance.

MEDICAL NEWS CAPSULES

This Month's Reading in Review

TIMOTHY B. NORBECK

"Yes, let's put the patient in the driver's seat, but with the doctor riding shotgun!"

Daniel "Stormy" Johnson, M.D., from his
speech as outgoing president of the AMA
(22 June 1997)

"An HMO executive, quoted last September in the *Business Record of Des Moines,* Iowa, summed up the industry's approach chillingly: 'We see people as numbers, not patients. It's easier to make a decision. Just like Ford, we're a mass-production medical assembly line, and there is no room for the human equation in our bottom line. Profits are king.'"

Wall Street Journal (18 June 1997)

The Massachusetts Legislature on June 30 ordered the Weld administration to give consumers continued access to disciplinary and malpractice information on the state's 27,000 doctors.... According to Michael Duffy, director of the state's Executive Office of Consumer Affairs, the Legislature approved a budget that would mandate "$247,000 for the physician profile system and $1.38 million for the Board of Directors in Medicine to license and discipline doctors."... It appeared last month that funding would not be available and that the physician profile system was in serious jeopardy.

Boston Globe (1 July 1997)

Say What? "If I saw or thought that there was any evidence whatsoever that conclusively proved that, in some way, tobacco was harmful to people, and I believed it in my heart and my soul, then I would get out of the business and I wouldn't be involved in it. Honestly, I have not seen one piece of medical evidence that has been presented by anybody, anywhere that absolutely, totally said that smoking caused the disease or created it. I believe this. I'm sitting here talking to you with an extremely clear conscience."

Gerald H. Long, President of R.J. Reynolds
Tobacco Company, 19 May 1986, as quoted in
the *Washington Times.*

The American Management Association's 1996 survey of member companies reveals that only 44% of companies that cut jobs since 1990 reported an increase in operating profits within one year; less than one third reported an increase in productivity. On the flip side, 35% of respondents reported increased turnover, and 72% said that employee morale went down.

"Big Business wins lukewarm support as 37% of Americans have a positive view of corporations, 33% are neutral and 22% have a negative view.... Bad news, good news: The public by 41% to 35% has a negative view of the media, but that has improved since a 50% to 26% negative image in January 1995."

Wall Street Journal (30 June 1997)

"I recently saw two lawyers. The first was my attorney, who did some work for which he charged me $185 per hour. I did not consider this unreasonable. The second was a patient in my internal-medicine practice. His law firm belongs to a health-maintenance organization that will pay me $156 to provide him with comprehensive medical care for the entire year. For this sum I will be available as his physician 24 hours a day, see him in the office as frequently as needed, and care for him in the hospital, if required. An hour of legal work is now worth more than a year of medical care."

Richard G. Williams, M.D. in
Reader's Digest (May 1997)

Brace yourself if you think there are too many lawyers.... The *Bureau of Labor Statistics* predicts that the number of lawyers in the United States alone will have grown by 28% between 1994 and 2005.... That growth rate is nearly double the average rate for other professions.

Bureau of Labor Statistics (June 1997)

Only in America: In Mill Valley, California, in March, 10th grader Ari Hoffman, who had just won first place in the Marin County science fair for his study finding that exposure to radiation decreased the offspring of fruit flies, was disqualified for cruelty when it was learned that about 35 to 200 flies died during the three-month experiment. Hoffman was disappointed because he had used extraordinary efforts to keep the flies alive, by, for example, maintaining a tropical temperature for the flies during the entire experiment.

San Jose Mercury News (17 June 1997)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

In Response to Drs. Arons' and Hasbani's Commentary "Carpal Tunnel Syndrome: The Significance of Electrodiagnostic Testing"

To the Editor: I read with interest the commentary by Dr. Arons and Hasbani regarding the need for EMG nerve conduction studies in all patients with a diagnosis of carpal tunnel syndrome. I too agree that as a baseline I believe that all patients with the diagnosis of carpal tunnel syndrome should have electrical diagnostic studies. I think the importance of ruling out associated conditions cannot be overlooked. It has not been infrequent that we have found a double crush syndrome whereby a cervical radiculopathy may be found in conjunction with a carpal tunnel syndrome. The presence of positive EMG studies is also important to delineate whether or not this patient falls into the category of severe carpal tunnel syndrome with denervation potentials already present. Certainly long term this has a less favorable prognosis when weakness of the median nerve-innervated muscle groups is already present.

The important question, however, becomes what to do with that patient who has a clinical exam consistent with carpal tunnel syndrome, but has a negative EMG and nerve conduction studies. I believe it is well established in the orthopaedic and hand surgery literature that at least ten, if not fifteen percent of patients with carpal tunnel syndrome will have negative studies. Studies have suggested that these patients will all do well with carpal tunnel release if they fail conservative measures. Conservative measures, however, I think are important for these patients; splinting, activity modification, and Vitamin B6 have worked well at The Orthopaedic and Sports Medicine Center to help treat these patients in the early stages.

In addition we have also employed a Lidocaine injection test to help confirm the diagnosis. A small amount of Lidocaine with DepoMedrol is injected into the carpal tunnel. If symptoms are duplicated with the Lidocaine injection then this helps to confirm the carpal tunnel as the source of symptoms. Frequently in these patients with more mild symptoms the DepoMedrol injection has provided either short-term or long-term improvement. While we do not advocate repeated injections in this fashion, this is one additional clinical test that can be used to help delineate which patients with electrical study-negative carpal tunnel syndrome may ultimately respond well to release.

By making use of all available forms of evaluation for the patient with carpal tunnel syndrome—clinical examination, electrical diagnostic studies, and Lidocaine injection—the best treatment plan and diagnosis for the patients with carpal tunnel syndrome can be achieved.

Michael R. Redler, M.D.
The Orthopaedic and Sports Medicine Center,
Trumbull and Fairfield, Connecticut.
Visiting Consultant, University of Virginia
Department of Hand Surgery & Sports Medicine.
Clinical Associate Professor, Quinnipiac College
Physician-Assistant Program

To the Editor: I am writing in response to the article titled "Carpal Tunnel Syndrome: The Significance of Electrodiagnostic Testing" in *Conn Med* 1997; 61:349-51 by Dr. Marvin S. Arons. I found Dr. Aron's article to be an excellent review of one of the controversial aspects of carpal tunnel syndrome, namely, whether or not electrodiagnostic testing should be routinely performed.

Based on even his own literature review I would take issue with his statement that "there is no justification for relying solely on office clinical and subjective judgment without ever ordering preoperative EDX studies." Although I am relying more and more on preoperative electrodiagnostic studies as well as occasional monitoring postoperatively in my own clinical practice, I find that the diagnosis can be made accurately by history and clinical examination in most cases.

One aspect of electrodiagnostic testing for median nerve compression of the carpal tunnel that continues to be a problem is the false-negative rate. My own clinic has been performing so called "stress" electrodiagnostic testing in which we have the patients perform the activity that appears to bring on their symptoms with electrodiagnostic testing being performed before and after the stress producing activity. In many cases this type of "stress" electrodiagnostic test has been helpful in establishing the diagnosis electrodiagnostically.

Robert P. Hendrikson, M.D.
Waterbury

HUMAN SERVICES
UNIVERSITY OF MARYLAND, BALTIMORE

In Response to Dr. Chotkowski's Letter to the Editor

To the Editor: I am writing in response to the letter addressing the chiropractic profession from Dr. Chotkowski, M.D., that you printed in the June 1997 issue of *Connecticut Medicine.*

Concerning the legitimacy of chiropractic, I believe It is important to call your readers' attention to the fact that there have been internationally recognized studies regarding the efficacy of chiropractic care. The first was an in-depth study conducted in the early 1990s by the Rand Corp. This study revealed that chiropractors deliver a substantial amount of health care to the U.S. population and that spinal manipulation is of benefit to patients with acute low-back pain. It is interesting to note that this study was conducted by a team of medical doctors as well as doctors of chiropractic.

The second study, concluded in 1994, was the publication of Patient Guidelines by the U.S. Department of Health and Human Services Agency for Health Care Policy Research (AHCPR). This document recommended manipulation as the preferred therapy for low-back pain in adults.

At New York Chiropractic College, we provide our students a quality education. This is readily evidenced by the fact that the College holds an Absolute Charter from the New York State Board of Regents and is accredited by the Commission on Accreditation of the Council on Chiropractic Education to award the Doctor of Chiropractic degree. New York Chiropractic College is also regionally accredited by the Commission on Higher Education, Middle States Association of Colleges and Schools.

We are proud of the high level of achievement our graduates attain as health-care providers. Our students are well trained in diagnosis and, as practitioners, know what to treat within their scope of practice and know when to refer out to other health-care professionals. The renewed health of literally tens of thousands of satisfied patients provides living testimony to the effectiveness of chiropractic care.

In closing I would like to affirm the College's commitment to seeking the best health care possible for those persons we are committed to serve. We believe it is imperative all health-care providers work together and we would welcome visits to our campus from those who are interested in joining in this vital undertaking.

Dr. Kenneth W. Padgett
President,
New York Chiropractic College

Dr. Chotkowski Responds:

The letter by chiropracter Kenneth W. Padgett, president of New York Chiropractic College, fails to address the very basic questions posed during my visit to the college, namely, where is the evidence for the chiropractic theory that there is a "subluxation"of a spinal vertebra which presses on a nerve, interfering with the passage of energy down that nerve to an organ and causing disease of that organ, and further, where is the evidence that chiropractic "adjustments"can benefit or cure these diseases? In scientific terms, what are the names of the diseases; exactly what is an "adjustment" manipulation and its function? This is the challenge to chiropractic.

As for the RAND report and the controversial Agency for the Health Care Policy and Research guideline report, they were both based primarily on the meta-analysis of Paul G. Shekelle et al, funded by the California Chiropractic Foundation. The AHCPR panel consisting of two osteopaths, two chiropractors, 11 medical doctors, and eight others, found that spinal manipulation was not helpful in the first two weeks of acute low-back pain, or after four weeks for chronic pain. There was a statistical increase in the rate of recovery associated with manipulation only in the two-week window period between the second and fourth week, at the end of which time back pain disappeared in most cases regardless of the treatment given.

Neither does the Padgett letter mention the RAND finding that, "Serious complications of lumbar manipulation, including paraplegia and death, have been reported."

Manipulations were performed by osteopaths, medical doctors, and chiropractors, but nowhere in the whole AHCPR report does the word chiropractic appear.

A subsequent report which tends to negate these findings, which president Padgett failed to address, is the Helsinki report of 9 February 1995 appearing in the *New England Journal of Medicine*. A group of low-back patients were instructed to twist their backs from one side to the other and backwards, 10 times each, every hour to their limit of pain tolerance.The group subjected to these spine-stretching exercises took longer to recover than a control group who had nothing done to their backs and simply went about their usual activities of daily living to tolerance.

More importantly and to the point, the theory of chiropractic and its claims to be a legitimate method of providing a variety of health care far exceeds the boundaries of controversial spinal manipulation limited to the third or fourth week of low-back pain. For example, chiropractic claims to be able to effectively treat ear infections with cervical manipulative adjustments, and that every newborn must have periodic spinal adjustments. This must be challenged as wishful thinking or pure quackery. And so, my impression of a visit to a chiropractic college remains the same. Clearly there is no evidence for such an entity as chiropractic as defined, and their colleges should abandon the outmoded theory and be converted into scientific medical schools.

L.A. Chotkowski, M.D.
Kensington

In Response to Dr. Ripps Essay "Physicians Take Collective Responsibility for Care"

To the Editor: In his essay, "Physicians Take Collective Responsibility for Care" which appeared in the May issue of *Connecticut Medicine*, Dr. Ronald Ripps expressed the concerns and frustrations of many of us, whatever our specialty.

However, as a primary-care doctor I disagree with his statement that "General practitioners ... and their incomes reflect how much money they've saved the HMO, rather than the quality and quantity of medicine dispensed." His statement implies that general practitioners' incomes have increased and the quality and quantity of their care has decreased. Theoretically, this is one of the fears many of us have about the gatekeeper concept—primary-care doctors doing more and more specialty work for which they are not trained.

However, though there may be a few enterprising physicians who do exploit the economic opportunities which managed care offers, most general practitioners (primary-care doctors) are not experiencing any economic surges. Neither are they decreasing the quality or quantity of the care they deliver. As a matter of fact most of them find the gatekeeper concept burdensome. This is why we are seeing more managed-care plans offering point-of-service options.

Dr. Ripps statement leads me to believe that unacknowledged tensions between primary care and specialty medicine continue to undermine our efforts to deal with managed care collectively and effectively.

A certain amount of rivalry between different categories of physicians is good. It fosters excellence and pride. But too much rivalry is bad. It becomes a negative thing and brings out our baser instincts and desires. It holds us back and allows the control of medicine to be wrested out of our hands.

The Connecticut State Medical Society should look at this issue of intraprofessional rivalry closely. In one way or another, to a greater or lesser degree, it is something that we are all guilty of.

Edward J. Volpintesta, M.D.
Bethel

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The VIth International Symposium
on
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will be hosted by
The University of Connecticut Health Center
15 – 18 October 1997
at
Avon Old Farms Inn and Hotel
Avon, Connecticut
Approved for 20 hours of CME credit
For additional information please call Dr. Ann Parke,
telephone: (860) 523-7344, fax: (860) 233-2741,
e-mail: Parke@nso.uchc.edu

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Co-sponsored by the
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The University of Massachusetts Medical School
Radisson Hotel, Cromwell, Connecticut
Saturday, 25 October 1997
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One Northwestern Drive, Bloomfield, CT 06002

From the Executive Director's Office

COUNCIL MEETING

Thursday, 10 July 1997

Attendance

Present, in addition to the chairman, Dr. Joseph Sadowski, were Drs. Bigos, Bobruff, C. Czarsty, J. Czarsty, Deren, Eslami, Fischbein, Freedman, Herzog, Kamens, Katz, Keating, Maloney, McDonnell, Redmond, Scarpa, Van Linda, Watson, Wetstone, Wolfson, and Zeppieri.

Also present were: Dr. Ahamed, Dr. Hollister, Dr. Parke, Mr. Norbeck, Ms. Lindquist, Ms. Morelli, Ms. Norbeck, Ms. Schaffman, Mr. Staples (all CSMS staff), Attorney Greg Pepe, Mr. Thompson (FCMA staff), Ms. Debiase (HCMA staff), Ms. Harney (NHCMA staff), Ms. Snider (New London, Middlesex and Windham counties staff).

Absent were: Drs. Beck, Brooks, Franklin, Geary, Handelman, Lesnik, Montegut, Mushlin, Narayanan, Schwartz, Sindwani, Sosa, Tesoro, Timmerman, and Wesler.

Organizational Meeting

The organizational meeting of the Council for 1997-98 was called to order by the president, Stanley J. Keating, Jr., M.D. He stated that this was a new year for the Council and on reflection we can all look back on the past year with a great deal of satisfaction, and that the successes in the legislative area will be elaborated on by Dr. David Parke, the chair of the legislative committee. He stated that he was pleased to be able to respond to the question, sometime raised by members, what have we done for them lately and what do we get for dues. We can easily defend what they get for their dues and what the county, state and national organizations have done for all of us this year under increasingly trying times. He stated the goal for next year is to build on those accomplishments and achievements. He noted that the darkest clouds on the horizon are the forces that drive us to increase our entrepreneurship and also to drive us apart and from our collegial and professional goals. This year he would like to make every effort to counterbalance those forces with more positive collegial goals for our organization, and stated that we are well equipped to accomplish that and are started on a trail that will lead us to stay together and work together.

He welcomed the old and new councilors and asked them to introduce themselves. He then asked for nominations for chair and vice-chair of the Council for 1997-98. It was VOTED to elect Joseph S. Sadowski, M.D., Hartford, chair, and Michael M. Deren, M.D., New London, vice-chair.

Reports of Related Organization

CSMS-IPA: Dr. David D. Thompson, Jr, M.D. , President of the CSMS-IPA, was unable to be present and submitted a written report. His report discussed the non-medical HMO expenses and stated that as a member of the HMO Finance Committee, he is constantly reviewing the expenses of the HMO, hoping to find some areas to trim so that more money can be made available to pay for medical care through the CSMS-IPA. HMOs also do medical management. An additional percentage of the premium dollar is spent controlling costs with considerable reduction in total premium expense. The costs of medical management are also carefully reviewed by the Finance committee and the Board of MD Health Plan. It was VOTED to accept the report as information.

CMIC: Dr. Sultan Ahamed, Chairman of the Board of CMIC, presented a check for $44,700 to Alfred Herzog, M.D., Chairman of the Physician Health Committee, and Dr. Keating for the physician health program. This is the third installment received

M.D. Advantage Update: Dr. Deren reported that the nine-member MSO steering committee met on 30 June to hear reports from the attorneys and it was recommended that a board be created to oversee M.D. Advantage, made up of seven members. The following slate of CSMS members were recommended to be on the board of M.D. Advantage. The nominees were Stuart Mushlin, M.D., from Fairfield County, John Bigos,M.D., from New London County, Brian Van Linda, M.D., from Hartford County, Prasad Sureddi, M.D., New Haven County. Deborah Whitehead, M.D., Middlesex County, Michael Deren, M.D., New London County, and Tim Norbeck. It was VOTED to approve the nominations of the committee for the M.D. Advantage Board.

Dr. Deren reported that they were in the process of negotiating contracts between MED 3000 and CSMS in the formation of M.D. Advantage. It was stated that there is a great deal of interest from various groups around the state in M.D. Advantage.

Report of the President

Dr. Keating stated that he wished to acknowledge the fact that from the time he came to CSMS he recalls Joe Czarsty as chairman of the Council and he wished to publicly acknowledge to the Council his appreciation and his sincere gratitude for all his wisdom and counsel.

Dr. Czarsty responded that he wished to thank everyone for their support during the years and was sure that Dr. Sadowski would get the same support and do an excellent job.

Dr. Keating reported that he had been privileged to attend several AMA meetings and wished to emphasize the impressive dedication and scope of effort that is put into the deliberations of the AMA House of Delegates meetings. He stated that he had attended the inauguration of the new AMA president, an impressive ceremony that gave the presidents of the various state societies opportunity to meet and talk to each other. Percy Wooton, M.D., was elected president, and Nancy W. Dickey, M.D. was elected president-elect.

Report of the Executive Director

Mr. Norbeck reported that we were successful twice in defeating the Massachusetts Profiling Bill which had been introduced in the Connecticut General Assembly. Word from Massachusetts was that it was prohibitively expensive and that the Weld administration and Massachusetts legislature would probably let it expire by the end of June. However, on 30 June, the Massachusetts legislature approved another $247,000 for the program to continue. Florida legislature also passed a similar bill and 13 states now post such information on the web site. It appears that with these circumstances, we will probably be facing this issue again.

He informed the Council that on 27 June, Bob Brunell and he drove down to Ridgewood, New Jersey, to attend the Jim Todd funeral, almost a year to the day after AAMSE had honored him with a dinner in Chicago. He was diagnosed with cancer on 21 May and died on 24 June. His 66th birthday would have been on 10 July.

On 30 June the California Supreme Court ruled that there was substantial evidence that Kaiser Permanente committed fraud and deliberately delayed arbitrating the case of a dying lung cancer patient in order to save thousands of dollars. This ruling could have a broad impact on HMOs, insurance companies, banks, and other business that rely on out-of-court arbitration to resolve disputes and save the high costs of going to trial.

He reported on the Senate bill that would raise the eligibility age for Medicare from 65 to 67 to conform somewhat with the changes in the Social Security regulations that were made in 1983. The Senate would also means-test the program. Singles with $50,000 income and couples with $75,000 income would pay more for Part B, and those with $100,000 for singles and $125,000 for couples would pay all of Part B. The House would trim $115 billion dollars from Medicare spending over five years as would the Senate, and would allow 500,000 seniors to participate in an experimental Medical Savings Account plan whereas the Senate would limit the experiment to 100,000. The House would also cap noneconomic damages in malpractice suits at $250,000, for which the AMA has been fighting for a long time. He reported it is unlikely that the Senate version of age eligibility going from 65 to 67 and a means test would prevail, or the cap on pain and suffering. What is really significant about the debate is that 12 Senate Democrats abandoned the old Democratic strategy of not tampering with Medicare and voted for the age change and a means test. That Senate vote shows that changes are coming in Medicare whether the AARP likes it or not and they have severely criticized those 12 Democratic Senators and other supporters.

Legislative Report

Dr. David Parke, Chairman of the CSMS Legislative Committee, stated that it was a pleasure to report that we had a very successful legislative session. Two written reports were distributed to members of the Council. One was the "End of Session Report" and the other outlined important issues that would be coming up in the future. He expressed his thanks to all the physicians that helped us in the legislative process, especially singling out Tim Norbeck, the CSMS Executive Director, Michael M. Deren, President, Sullivan and LeShane, the CSMS lobbyist, and most of all he was grateful to Mag Morelli, CSMS Director of Government Relations.

Dr. Parke reviewed some of the highlights of the legislative session as follows:

The State House of Representatives voted 144-1 and the State Senate voted 36-0 in support of a managed-care reform bill, House Bill 6883, which was signed by the governor on 6 June. He stated that every member of CSMS should be pleased to see that their grassroots lobbying efforts and the efforts of organized medicine have resulted in this comprehensive bill. This bill will provide patients and the medical profession with a set of basic laws that can be utilized to insure that managed-care patients receive appropriate medical care, including a binding external appeals process that is a model for the rest of the country. Other highlights of the bill include a ban on gag clauses, the opening up of medical protocols, managed-care report cards, improved internal utilization review standards, a process of expedited utilization review decisions for issues such as length of stay, coverage parity for biologically based mental health conditions, and the prudent lay person definition of emergency. The statute contains many other provisions all of which were outlined in the material distributed.

The Physician Profiling Bill, Senate Bill 641, "An Act Allowing Access to Information about Health Care Providers," which would have established a system within the Department of Public Health to provide the public with profile information on all licensed physicians, including malpractice information, died in the Public Health Committee.

Advanced Practice Registered Nurses (APRN) proposed a bill to allow APRNs to perform advanced levels of diagnosis, treatment, and prevention, as well as prescribe, independently, without any physician oversight or direction. CSMS was opposed to the proposed language and worked with other medical lobbyists to have the bill amended in committee. The amended bill proposed only to create a task force to study the issue. The nursing organization was not satisfied with the amended language and the bill died in the Senate.

Other issues CSMS supported were:

An Act Concerning Insurance Coverage for Medically Necessary Post-mastectomy Care, which was passed and signed by the governor and became effective 1 July.

An Act Concerning Pilot Research Programs for Treating Drug Addiction and the Qualifications and Licensure for Certain Health Care Professionals passed and was signed by the governor.

An Act Concerning the Department of Public Health Licensure was passed and signed by the governor. This bill includes changes to the physician assistant and podiatrist statutes that were previously negotiated with CSMS. Unfortunately, this bill no longer contains the reduction in licensure fee for retired medical professionals who perform community service.

An Act Prohibiting Discrimination in the sale of Health Insurance on the Basis of Genetic Information and Protecting the Privacy of Genetic Information has been signed by the governor.

An Act Concerning Professional Service Corporations which will allow chiropractors and optometrists to form professional service corporations with medical doctors of related specialties, passed and was signed by the governor.

An Act Concerning Advance Review and Approval of the Sale or Conversion of Nonprofit Health Care Facilities to For-Profit Entities was passed and signed by the governor.

Dr. Parke touched on other bills that were vetoed and in which CSMS had an interest and that were passed and signed. A complete State-Legislative-End of Session Report has been published in the July CSMS Newsletter.

The chairman of the Council expressed the appreciation of the membership to Dr. Parke for his excellent efforts in the legislative arena.

Report of AMA Delegation on June 1997 Meeting

Dr. Kamens reported that the low point of the meeting was the announcement of the death of James Todd, M.D., Executive Vice-President of the AMA, who retired in 1966.

Percy Wootton, M.D., was elected president, and Nancy W. Dickey, M.D., was elected the first woman president-elect of the AMA.

He reported that over 400 resolutions were reviewed dealing with such topics as managed care, delays in payment, not notifying physicians under the capitation system when patients have been added to their list, funding for insurance and individual ownership of insurance, assisted living, medical care for legal immigrants, laboratory studies, rural health care, modification of anti-trust regulations, campaign finance reform, medical records, development of universal CPT coding, if possible, etc.

The AMA House of Delegates stood behind its Board of Trustees' endorsement of federal legislation to ban a controversial late term abortion procedure, despite a vigorous lobbying campaign by opponents of the position. Delegates unanimously called on the AMA to work to remove restrictions for physicians to form collective bargaining units in order to negotiate reasonable payments for medical services and to compete in the current managed care environment. An Institute of Ethics has been formed with is major focus on the quality of care in the last phase of the life of a patient. The Council on Medical Service worked on legislative issues that would try to formulate policies for the coverage of 43 million Americans still uncovered by health insurance. Connecticut has 86,000 children that are not covered by insurance, 90% of them from working class families.

Restructuring of the AMA has begun. The board will expand the terms of office of members of the Board of Trustees to four years and limit the terms to two terms

Legislative high points were discussed and Connecticut was singled out for what it has been able to achieve on issues of interest to physicians in the Connecticut Legislature.

He reported that the AMA meeting occupies a full six days and nights of work.

Dr. Eslami and Dr. Freedman also commented on the meeting.

Jerome K. Freedman, M.D.

Dr. Joseph Czarsty reported that he had received a letter from Dr. Freedman that he was resigning as an AMA delegate and retiring from practice and moving to New Jersey. Dr. Czarsty praised Dr. Freedman and stated that he has always given his best to CSMS and to medicine in general; and always fought for his principles which were 98% of the time the same as everyone in the Council.

Dr. Czarsty presented a plaque to Dr. Freedman from the Council which read "in recognition and appreciation of Jerome K. Freedman, M.D., for his distinguished and excellent leadership service as President 1978-79, on the AMA Delegation 1983-1997, and on the Council from 1970 to 1997".

Dr. Freedman commented on some of the major issues that CSMS encountered throughout his years of service, i.e. Blue Shield, DRGs, Connecticut Regional Medical Program, Connecticut Ambulatory Care Study, CPRO, RBRVS, CMIC, M.D. Health Plan, remodeling the building, HIV mandatory testing. He asked that physicians not become discouraged as we have had many successes and should keep up the good fight. He thanked the Council for the privilege of serving the doctors of the state and for all the courtesies that have been extended to him.

Mandatory HIV Testing

It was moved to take the subject issue that was discussed at the 12 March 1997 meeting off the table. The Council voted that CSMS join AMA in support of mandatory HIV testing of pregnant women. At the last meeting the AMA has now adopted the policy that voluntary testing would be the rule. It was VOTED that CSMS would also change the policy previously adopted and adopt the policy of voluntary HIV testing for pregnant women.

Committee on Public Affairs

It was VOTED to approve the following recommendations submitted by the committee:

(a) That the Committee on Public Affairs organize and sponsor smoking cessation workshops, in conjunction with Glaxo Wellcome, for CSMS physician members. The workshops will follow the Agency for Health Care Policy and Research Smoking Cessation Clinical Practice Guidelines published in *JAMA*, 24 April 24, 1996

(b) The Committee, in conjunction with the Committee on Legislation, put on a statewide public education campaign, "M.D. Makes The Difference."

These projects will be covered by current Public Affairs budget.

Committee Appointments

Committee on Ethical & Judicial Affairs: Robert Greenberg, M.D., Vernon, resigned. Replacement is needed from Tolland County to fill unexpired term 1996-2000. It was VOTED to ask Tolland County for a replacement. (Tolland County has submitted the name of Harold E. Sandals M.D., Rockville, to fill the vacancy.)

Committee on Maternal Morbidity & Mortality: It was VOTED to add Paul Fiedler, M.D., New Haven to the committee.

Committee on Public Health: It was VOTED to add Howard D. Fink, M.D., Milford, to the committee.

Declaratory Ruling on Use of Lasers

It was brought to the attention of the Council that the Connecticut Medical Examining Board will hold a hearing for the purpose of issuing a declaratory ruling in response to a petition submitted by the American Electrology Association. The declaratory ruling proceeding will address whether health care providers other than licensed physicians can use lasers for the purpose of hair removal. It was VOTED to oppose medical use of lasers by non-M.D.s and to retain counsel to seek intervener status to carry out this charge at the Connecticut Medical Examining Board hearing.

Dates of Future Meetings

Council Meetings:
27 August 1997
16 October 1997 (changed from 15 October)
Semi-Annual Meeting House of Delegates:
Wednesday, 12 November 1997

New Catalog Helps Obstetricians and Pediatricians Counsel Patients to Stop Smoking

From complete smoking cessation programs to pamphlets on secondhand smoke, this new catalog, developed in response to the AHCPR Clinical Practice Guidelines on Smoking cessation, contains dozens of quality resources.

The catalog, developed by researchers in the field of smoking cessation at the University of Alabama at Birmingham, includes a host of state-of-the-art materials highly rated by health care professionals and patients alike! FREE copies of the catalog can be ordered from the Wisconsin Clearinghouse for Prevention Resources at 1-800-322-1468 while supplies last.

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The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

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The Mashantucket Pequot Tribal Nation is seeking to fill the position of Primary Care Physician to provide outpatient/inpatient care at the Mashantucket Pequot Tribal Health Department. Candidates must be BC/BE Family Physician with a license to practice in the state of Connecticut. Five years active practice and experience with Indian Health Services is preferred. Please send CV to: Human Resources Department, Mashantucket Pequot Tribal Nation, P.O. Box 3199, 1 Matt's Path, Mashantucket, CT 06399-3199. The Mashantucket Pequot Tribal Nation is an AA/EOE, and Native Americans are encouraged to apply.

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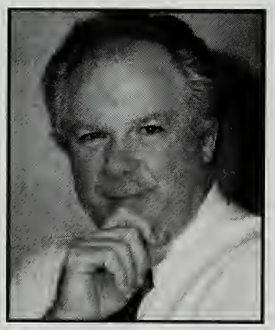

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The Institute of Living: 175 Years of Innovation and Excellence

HAROLD I. SCHWARTZ, M.D.

THE Institute of Living celebrates the 175th anniversary of the granting of its charter this year. The Connecticut State Medical Society played an instrumental role in the birth of the Institute, the first hospital of any kind in Connecticut and one of the first psychiatric hospitals in America. It is especially fitting that the medical society join in our celebration with this special issue of *Connecticut Medicine*. At a time when market-driven pressures are revolutionizing the practice of medicine and particularly the role, structures, and functions of medical institutions, it seems especially important to pause, to consider our past and its relation to our present and future.

The Connecticut State Medical Society first began a discussion of the establishment of a "lunatic hospital" in 1812. In 1822 it presented a petition to the General Assembly for the establishment of an asylum and, to demonstrate its determination, "emptied its coffers" of six hundred dollars, in support of the cause. A fund raising campaign throughout the state generated additional cash, pledges, and other gifts (including a gross of liver pills). On 22 May 1822 the state legislature granted a charter for the Connecticut Retreat for the Insane (later the Hartford Retreat) along with a grant of five thousand dollars of public funds. In 1824 the Retreat accepted its first patients, "... a male, single, 36, suffering from the result of 'fanaticism,' and a young woman, 26, who had 'broken down' recently from overtaxing the intellect with difficult studies."[1] Dr. Eli Todd, a Connecticut physician whose interest in the plight of the insane was a driving force behind the establishment of the Retreat, was selected as the first superintendent and resident physician.

Dr. Todd was a groundbreaker, founding the retreat on the principles of "moral treatment," first developed by Tuke at the York Retreat in England in 1796 and Pinel at the Bicêtre in Paris a few years later. The word *moral* in this context had multiple meanings. It was used by the early psychiatrists as the equivalent of emotional or psychological. The historian J.S. Bockoven writes, "The term is intimately related to the word *morale* and carries within it emotional connotations of the words zeal, hope, spirit and confidence. It also has to do with custom, conduct, way of life, and inner meaning. The word moral ... has many shades of meaning with respect to interpersonal relations, besides having to do with abstract ideas, right and wrong and good and evil."[2] In concrete terms, moral treatment introduced the revolutionary premise that mental disorder was, in fact, treatable disease. The moral treatment movement replaced chains and confinement with kindness and compassion. Patients were fed well, clothed and housed with dignity, and treated as rational beings. They spent the day in "useful occupations," exercise, and educational and spiritual activities, all in an environment which minimized the use of physical restraints and maximized the value of a physically beautiful and serene refuge or "retreat" from the pressures of society. In this issue, Clouette and Deslandes provide a review and critique of the moral treatment movement and its implementation at the Retreat.[3]

The remarkable contributions of Dr. Todd and the Hartford Retreat cannot be understated. An early edition of the *American Journal of Insanity* (later the *American Journal of Psychiatry*) credited Todd with "... having zealously embraced, and practically introduced into this country, and made extensively known here" the concepts and practice of moral treatment. Todd combined his knowl-

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HAROLD I. SCHWARTZ, M.D., vice president, clinical affairs and medical director, The Institute of Living: Hartford Hospital's Mental Health Network, associate professor and associate chairman, Department of Psychiatry, The University of Connecticut School of Medicine.

edge of medicine and physiology with the psychological approaches of moral treatment to create what was undoubtedly the first system of health care in America to address mind and body in such an integrated fashion. In so doing, he placed himself and the Retreat at the cutting edge of psychiatric practice and presaged the biopsychosocial model, a modern treatment philosophy that calls for attention to the interrelatedness of biological, psychological, and social aspects of behavior. It is even more notable to remember that this remarkable contribution began only a generation after mental patients were first released from their chains in the dungeons of the early European asylums. With these innovations, Todd and the Institute of Living played an instrumental role in the foundation of modern American psychiatry. The Institute of Living has not wavered in its focus on humane treatment and the combination of the best in psychological, social, and biological treatments in 175 years.

Progress in psychiatry has never been linear. As the 19th century transitioned into the 20th, huge state hospital systems evolved in response to social pressures. Too many patients, inadequate resources, and too few effective therapies overwhelmed the potential of moral treatment in these public systems. The ensuing search for more effective somatic therapies, in which staff at the Hartford Retreat played a considerable role, produced checkered results. For example, electroconvulsive therapy, embraced early at the Retreat, has proven to be a safe and effective mainstay of treatment for a subset of seriously ill patients. Psychosurgery, on the other hand, was also embraced by Retreat staff but has fallen largely by a controversial wayside. Duffy and colleagues provide an absorbing review of these treatments in their article "Primum non Nocere: Somatic treatments for mental illness in the early 20th century."[4]

The Hartford Retreat had fallen into financial and programmatic doldrums when, in 1931, the board of directors selected Dr. C. Charles Burlingame as superintendant, with the hope that he would reinvigorate the institution. Dr. Burlingame rapidly established the Neuro-Psychiatric Institute of the Hartford Retreat and, in 1943, changed the name of the Retreat altogether to The Institute of Living. In so doing he attempted to shape the institution as part hospital, part university campus, and part country club. Despite his brief dalliance with the "country club" aspect of care, Burlingame was intent on bringing psychiatry into the mainstream of modern medicine. He observed, "The psychiatrist should be on friendly terms with a stethoscope," an admonition that remains relevant to this day. His "... adherence to the two principles of closer medical-psychiatric relations and increased public comprehension of psychiatry helped pave the way for the gradual acceptance of psychiatry as a medical discipline by physicians in general and by the public."[1]

Despite virtually ceaseless change, a number of constants run through the Institute's history: the tension to strike the right balance between biological, psychological, and social aspects of treatment; the struggle to provide care to the indigent while succeeding in the private sector; the balance in emphasis between clinical service, research, and training are all examples. The Institute remains active in research and is a major source of psychiatric training and education. For example, Dr. Glen Gabbard's contribution to this edition, entitled "Dynamic Psychotherapy in the Decade of the Brain,"[5] was first presented at the Institute's annual C. Charles Burlingame Award lecture in May of this year. The article is a *tour de force* review of the basic and clinical neuroscience linking mind, brain, body, and behavior. Still another major educational event at the Institute is the annual Ben Wiesel lectureship. This past year's lecture was presented by Dr. Jeffrey Cummings. His state of the art review entitled, "Alzheimer's Disease: Cognitive and Behavioral Pharmacotherapy,"[6] is especially relevant to the Institute's recognized expertise in the care of geriatric patients.

Additional articles in this issue provide a sampling of some of the research and other scholarly endeavors of Institute staff and friends. A major thrust of the Institute in recent years has been in health services related research and, particularly, in outcomes studies. Dornelas, Goethe, and Fischer use the Institute's huge outcome study data base to report on the predictive value of functional status on admission.[7] The Institute's clinical alert system is a computer-based, order entry-driven system that alerts clinicians rapidly when they are practicing outside of established practice guidelines. This is "real time" quality management. Goethe, Schwartz, and Szarek report on the degree to which such a system can actually produce measurable improvement in clinical practice.[8] From the Braceland Center on Mental Health and Aging (the Institute's geriatric mental health policy institute) Leslie Walker issues a cogent advisory about the risk to informed patient choice inherent in current models of managed Medicare.[9] Seltzer and colleagues report on the role of cognitive retraining at the Institute's Schizophrenia Rehabilitation Center, a new clinical and research program at the Institute that has just received significant external funding.[10] Finally, Lothstein and colleagues report on the treatment of sexual disinhibition in geriatric patients,[11] and Alex Cardoni reviews current and future psychopharmacology.[12]

The Institute's commitment to the training of psychiatrists, psychologists, and other mental health professionals has long been a core part of its mission. Our psychiatric residency program has been conducted jointly with the Department of Psychiatry of the University of Connecticut School of Medicine since 1989. Our residency pro-

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Retreat for the insane, Hartford, Connecticut, mid 19th century.

gram has a long-standing commitment, in keeping with the Institute's philosophy, to provide state-of-the-art training in the psychologic as well as biologic and social aspects of assessment and treatment. While this may seem an obvious goal for any psychiatric residency training program, many programs have abandoned training in the psychotherapies in response to managed-care pressures and enthusiasm for the expanding armementarium of pyschopharmacologic agents. This is an insidious development which threatens to throw out the biologic baby with the psychosocial bath water. Dr. David Goldberg, our Director of Residency Training, provides commentary in "Psychotherapy and Psychiatry: A Partnership for the Future."[13] Our relationship with the University of Connecticut Department of Psychiatry, cemented by our joint residency program, has grown deeper through Hartford Hospital's Strategic Alliance with the University of Connecticut Health Center. Two contributions by our Alliance partners round out this special issue and emphasize the special strengths of the University of Connecticut Department of Psychiatry in substance abuse and dependency research.[14,15]

If there has been a single consistent theme throughout the history of the Institute it has been the constant need to adapt to a changing environment and to remain financially viable. This issue has reached a crescendo during the last 10 years under the onslaught of managed care. Under pressure to shorten lengths of stay and to emphasize alternative levels of care, the Institute has downsized from over 400 beds to 130. More importantly, the Institute has transitioned from a hospital to an extensive system of care, with services reaching across a broad continuum of intensity from facility-based emergency assessment, crisis observation and inpatient, to regionally based intensive outpatient and in-home programs. From an historical point of view, however, the most remarkable adaptation has been the integration of the Institute of Living into Hartford Hospital which was completed in 1994. Facing a very uncertain future in the early 1990s, the Institute's Board of Directors entered into a dialogue with Hartford Hospital that culminated in the Institute's joining Hartford Hospital as its center of excellence in behavioral health. As Hartford Hospital's Mental Health Network, the Institute has opened a new chapter in its history, at the heart of an evolving state-wide integrated system of behavioral health care.

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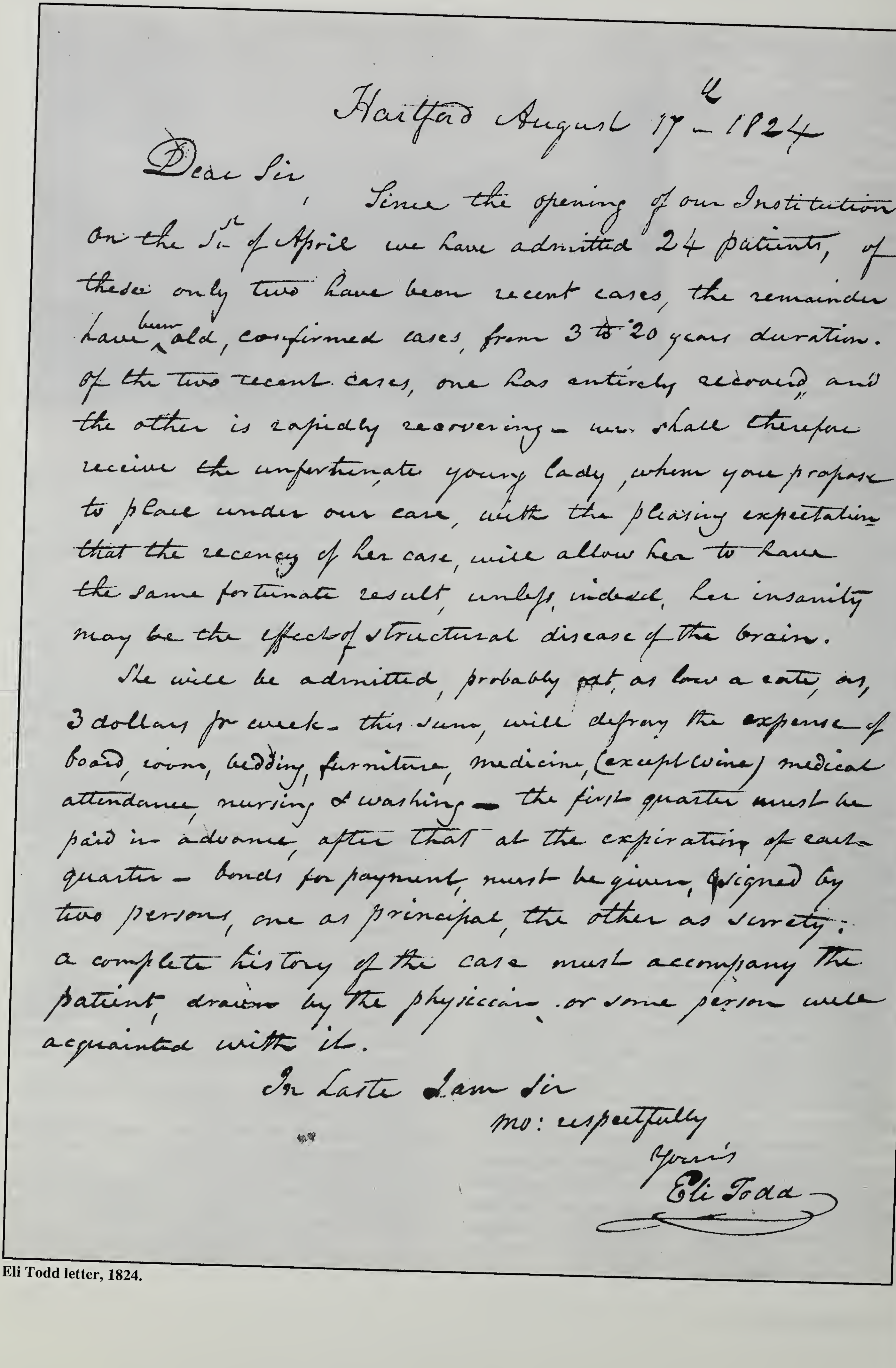

Hartford August 17th 1824

Dear Sir,

Since the opening of our Institution on the 1st of April we have admitted 24 patients, of these only two have been recent cases, the remainder have been old, confirmed cases, from 3 to 20 years duration. Of the two recent cases, one has entirely recovered and the other is rapidly recovering — we shall therefore receive the unfortunate young lady, whom you propose to place under our care, with the pleasing expectation that the recency of her case, will allow her to have the same fortunate result, unless, indeed, her insanity may be the effect of structural disease of the brain.

She will be admitted, probably at, as low a rate, as, 3 dollars pr week — this sum, will defray the expense of board, room, bedding, furniture, medicine, (except wine) medical attendance, nursing & washing — the first quarter must be paid in advance, after that at the expiration of each quarter — bonds for payment, must be given, signed by two persons, one as principal, the other as surety: a complete history of the case must accompany the patient, drawn by the physician or some person well acquainted with it.

In haste I am Sir

Mo: respectfully

Your's

Eli Todd

Eli Todd letter, 1824.

The Hartford Retreat for the Insane: An Early Example of the Use of "Moral Treatment" in America

BRUCE CLOUETTE, PH.D. AND PAUL DESLANDES, PH.D.

WHEN members of the Connecticut State Medical Society gathered in 1821 to discuss the condition of "insane persons," they began a process that resulted in the establishment of the state's first mental-health facility, one of the earliest in America to be based upon the principles of what had come to be known as moral treatment. In considering an increasingly pressing dilemma both for the medical profession and society at large, the physicians concluded that an asylum established explicitly for the relief of the insane was necessary to alleviate the sufferings of the "poor maniac" who, in many cases, was "doomed to confinement in the lonely dungeon" and forced to "wear the chains which should be reserved for guilt alone." These sad creatures, the Medical Society's report continued, merited "our intercession and our sympathy."

The benefits that the insane themselves would derive from institutionalization were thought to be multifold, according to its optimistic advocates:

> ... the admittance of the insane into an asylum would add very materially to their own comfort. There they would be treated with humanity, and allowed every indulgence compatible with their recovery; and there they would experience the benefit of judicious medical treatment, associated with the experience of benevolent and faithful attendants. There they would find neither solitude to depress, nor unwelcome society to estrange the diseased mind; and with these advantages, it is reasonable to expect that the subject of melancholy will become cheerful, and the wild maniac regain his composure.[1]

The Medical Society also pointed to the importance of "sequestering [the insane] from public view," citing the danger posed to the sane citizens of Connecticut by those prone to violent episodes and also suggesting Americans' growing reluctance to be exposed to the unfortunate. Finally, an institution could provide relief for the families of the afflicted, most of whom (if they possessed the means) were required by Connecticut statute to provide for the care of their loved ones at home or in other private residences.

The Medical Society's efforts resulted in the creation of the Society for the Relief of the Insane, an organization led by prominent physicians from the Hartford area. Through public subscriptions and other fund-raising activities, the Society soon raised sufficient capital to begin the new venture in earnest and, in May 1822, secured from the state legislature a charter for the "Connecticut Retreat for the Insane at Hartford." While it would be nearly two years before the first patient was admitted to the newly erected asylum (the first permanent hospital of any type in Connecticut), care for the mentally ill in the state seemed, in 1824, to be making a radical break with the past. Unlike the harsh treatment and inhumane methods of restraint common at the time (practices that were influenced in part by a belief that the insane lacked such essential human traits as the ability to feel cold[2]), the new asylum in Hartford was to be the very model of "humane" or "moral" treatment. According to Eli Todd, the first superintendent, the Retreat would be based upon,

> ... certain plain and simple maxims ... which are easily understood and of universal application. These are, to treat them, in all cases, as far as possible, as rational beings. To allow them all the liberties and indulgence, compatible with their own safety and that of others. To cherish in them the sentiment of self-respect. To excite an ambition for the good will and esteem of others. To draw out the latent sparks of natural and social affection.[3]

This acknowledgment of the advantages of moral treatment and the implementation of these methods at the Hartford Retreat did not, of course, occur in a cultural,

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social, or scientific vacuum. In its stress on the dignity of the individual, moral treatment was part of a broad movement of romantic humanitarianism in European and American culture that transformed not only medicine but religion, the arts, and social relationships. Traditional society had been more communal in outlook, stressing one's role in the family, church, and town rather than celebrating particular individuality. By the early 1800s, however, signs of change were everywhere. The monopoly over religious life exercised by Congregationalist ministers was challenged in Connecticut by rising numbers of Episcopalians, Baptists, and Methodists. The new sects not only introduced diversity but, particularly in the case of the Baptists and Methodists, proclaimed a view of salvation that was open to everyone (not just God's elect), a salvation that could be obtained through an act of an individual's free will. In literature and graphic arts, there appeared a new emphasis on emotion and the feelings of the individual, often bordering on what (to us) seems saccharine sentimentality. Finally, large numbers of people, particularly the young, were choosing to leave family, church, and town behind and strike out on their own, moving to new settlements in the upper Connecticut River valley, New York State, and the Midwest. Much to the concern of Connecticut's established political and religious leaders, people were applying the individualist political ideology of the American Revolution to their personal lives.

The Retreat also reflected an increasing tendency among Americans in the early years of the Republic to seek answers to social problems in the form of institutions such as hospitals, schools, poorhouses, and asylums. The "discovery of the asylum" represented in part an attempt to stem the tide of potentially disruptive changes prompted by urbanization and industrialization and a perceived loss of the sense of community common to rural New England life.[4] At the same time, enlightenment philosophy in general, and the ideology of the American Revolution in particular, inspired people with the idea that, guided by reason, human beings could create completely new social and political organizations. In the late 18th and early 19th centuries, numerous institutions were formed in Connecticut to address social needs: the Connecticut Missionary Society (1792), organized to promote Christianity in the supposedly godless frontier; the American Asylum for the Deaf and Dumb, a school for the hearing-impaired in Hartford; the Hartford Female Seminary, a pioneering women's college (1823); and a new state prison (1827) at Wethersfield, established in the hope of reforming the criminals imprisoned there. The period also witnessed the adoption of a new constitution for Connecticut, one that specifically enumerated the rights of individuals and proclaimed religious toleration. Finally, two important institutions affecting medical practice were started in this period: the Connecticut State Medical Society, founded in 1792,[5] and the Yale Medical School, created in partnership with the Medical Society and the State in 1814. In the words of the editor of Hartford's *Connecticut Courant*, it was "eminently an age for religious, charitable and humane institutions."[6]

The adoption of moral treatment methods in the United States, first in 1817 at the Friends Asylum in Frankford, Pennsylvania, and then in 1822 in Hartford,[7] was preceded by reform movements in Europe. As concerns about insanity became more pronounced in the late 18th century, attempts were made to find new ways to segregate people suffering with mental illness from more "rational" human beings. Viewed as threats to social stability as well as to themselves, the insane in England and France were frequently confined in inhumane ways to jails or, increasingly, hospitals. Medical procedures which induced bleeding, vomiting, or purging were employed to treat insanity in hopes of restoring balance to the bodily system (an approach premised on theories related to the four humors: blood, black bile, phlegm, and yellow bile). As later advocates of moral treatment somewhat self-servingly noted, "physicians in general had no conception that diseases of the mind could be cured," other than by such direct and exclusively physiological approaches; when doctors failed with these treatments, cases were often considered to be "altogether hopeless and forlorn."[3] Indeed, it seemed to contemporaries that there existed few options other than harsh confinement.

Egregious violations of standards of human decency in the treatment of the insane elicited impassioned responses. For example, the death of a Quaker woman at the Asylum for the Insane in York, England, in 1790 prompted William Tuke and others to establish another hospital there where insane persons might be treated with Christian charity, humanity, and kindness.[2] The York Retreat, founded in 1796, was paralleled in France by the reforms of Philippe Pinel who, in the early 1790s, sought to improve the institutional care of the insane offered at the Bicêtre and Salpêtrière hospitals in Paris. In his *Traité Médico-Philosophique sur la Manie* (1801), Pinel advocated the judicious and discriminating use of medicinal treatments, kind and compassionate firmness in dealing with the insane, the minimal use of restraint, and a regular regimen of good food, exercise, and useful employments.

While Pinel's writings were unquestionably influential, Samuel Tuke (William's grandson) undoubtedly had a greater effect on the American medical community with his *Description of the Retreat Near York* (1813), which recounted the benefits of humane treatment in English and with greater optimism. Aside from offering very specific accounts of the founding of the York Retreat, its history,

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and the forms of medical treatment employed therein, Tuke saw fit to devote many of his pages to an elucidation of the principles of moral treatment. Much of what Tuke had to say about human kindness may strike the modern reader as obvious platitudes. For example, Tuke noted that "much may be done towards the cure and alleviation of insanity, by judicious modes of management, and moral treatment." With more specific reference to cultivating the natural affections of the afflicted, he offered the following advice: "the judicious kindness of others appears generally to excite the gratitude and affection of the patient."[8] In his day, however, Tuke was a source of inspiration. One founder of the Hartford Retreat remembered their having only two books to guide efforts: Pinel's treatise and Tuke's *Description of the York Retreat.*[9]

Moral treatment had as its philosophical basis a particular understanding of human nature: people had a number of distinct moral qualities, among which were intelligence, empathy, will, and reason. These qualities were thought to be well-balanced in a healthy individual; mental disorders were manifestations of a lack of balance. Doctors in the early 19th century recognized virtually the entire range of factors that today are considered as contributing to mental disorders, including genetic predisposition, physical trauma to the brain, the stress of social and family situations, substance abuse, and the effects of organic diseases such as syphilis, even though their understanding of the mechanisms by which the factors operated was limited. Nevertheless, at least in the beginning, the practitioners of moral treatment had every expectation that their methods could restore harmony to the unbalanced individual and thereby effect improvement, regardless of the source of the disorder.

Although several doctors participated in the investigation of the condition of the insane in Connecticut and recommended the establishment of an institution to treat insane individuals, foremost among them was the man who became the Retreat's first superintendent, Eli Todd (1769–1833). Todd was born into a well-to-do family that was plagued by death, desertion, and insanity. He attended Yale, graduating with some distinction in 1787, and proceeded to study medicine in what was then the usual manner: apprenticing himself for two years to an established and well-respected physician, Dr. Hezekiah Beardsley. In 1790, Todd set out on his own in Farmington and later relocated to Hartford. In 1813 he was elected president of the Connecticut State Medical Society, which awarded him the honorary degree of M.D.[10] Dr. Todd's appearance was described by his colleague Samuel Woodward as,

> ... dignified and commanding, at the same time exhibiting condescension and urbanity.... He had a good constitution, was capable of great endurance, with an appearance of health, vigor and stamina that indicates a long and happy life. His manners were easy and agreeable.... His countenance was strongly marked, expressive of vigorous intellect, and beaming with benevolence and kindness.[9]

The program of moral treatment that Todd implemented at the Retreat had several components. First, the physical surroundings of the Retreat were chosen and developed so as to create a restful, pastoral milieu. The site itself was well outside the built-up part of Hartford, more than a mile from the Old State House in the center of the city; the former farmland was chosen because of its view overlooking the Connecticut River and the opportunity it presented for grounds with walks, gardens, and meadows.[11]

The asylum was meant to provide a refuge from society but also a place in which the insane might acquire the skills necessary to return to "normal" society. Fueled in the 19th century by a growing belief in the curability of the insane, Todd concluded in 1825 that the institution must "occupy their attention, exercise their judgement and ingenuity, and minister to their self-complacency by engaging them in useful employments alternated with amusements."[3]

In order to achieve the desired results, certain protocols were established. Foremost was a concern, articulated first by Eli Todd and continued by subsequent superintendents, fully document to the medical and mental condition of newly admitted patients. Sample questions and other documents from the 1820s, '30s, and '40s indicate the thoroughness of these early versions of case histories. According to questionnaires, printed especially for the Retreat and currently housed in the Institute of Living archives, the admitting physician or attendant was expected to ask for information about a range of factors affecting behavior including religious beliefs, marital status, hereditary predispositions, and patterns of alcohol and tobacco consumption. Additionally, more general questions were posed to ascertain "general habits of life, predominant passions or prejudices and any habitual vice[s]."[12]

Once the general health and state of mind was determined, a course of treatment was prescribed for a stay which, during the entire 19th century, was at least three months in duration. For most of those admitted, the regimen included daily interaction with fellow patients, regular meals of healthful food, adequate exercise, and some sort of useful occupation, which might include reading, handiwork of many types, or gardening. A typical day generally began relatively early in the morning (6:00-7:00 A.M.) when the patient rose from bed, washed, and dressed, usually under the supervision or with the assistance of attendants who, it was repeatedly noted, were instructed to maintain a "uniform course of steady, unwavering attention, gentleness, kindness, and sympathy toward every one under their care."[13] This was followed by breakfast and exercise (usually a walk) taken somewhere on the Retreat's extensive grounds. Other pursuits or amusements might be encouraged for those patients deemed well enough to partake. These included, in the early decades of the Retreat's history, reading, sewing parties, some painting and music for the "ladies," and backgammon, card games, rolling at ten-pins, quoits, and ball-playing for the men.[14] After lunch, patients might again pursue one or more of these activities or take some rest. Evenings were devoted to dinners of "good and plentiful" proportions.[15] Meals were frequently followed by lectures, concerts (performed both by patients and outside groups including local choral societies), and supervised dances which united, for brief periods, the male and female patients of the Retreat who resided in separate wings of the asylum's main building. Such festivities were a "favorite amusement" of patients at which, Superintendent John Butler noted in 1844, even "the most noisy and ungovernable" conducted "themselves with entire propriety,"[16] further evidence of the importance ascribed to environmental influences.

There were, of course, patients who were subject to fits of violence, suicide attempts, or simple instability, and who were then unable to participate in these more public activities. "Judicious kindness" was invoked as the guiding principle in formulating methods of treatment for such cases. Violent forms of restraint, generally eschewed by the proponents of moral treatment, were absent from the Retreat. Still, there was, on occasion, need to resort to some forceful means. Eli Todd, writing in the 1820s, delineated the specific standards of behavior for carrying out such procedures and established some explicit boundaries:

> No one will ever be allowed to confine a patient without an order from the physician, or keeper. And on no occasion to use opprobrious, or even passionate language, in the discharge of his duty. Striking, beating, or in any way maltreating the patients, is made an unpardonable offence."[3]

It is, however, important to bear in mind that, despite the rhetoric, the use of humane restraint generally remained an unavoidable feature of treating mental illness. What differentiated its use at the Retreat from past practices was the fact that it was to be employed, at least in principle, only in the most necessary circumstances and with "frankness and kindness."[17]

Although moral treatment challenged the predominance of physiological approaches, Eli Todd and his successors recognized the importance of balancing the newer environmental focus with "tried and true" medical methods, which at the time primarily meant purging the system. Given the explicit connections one might assume between mind and body, he observed, "it is by no means intended in the prosecution of the moral regimen, in its fullest extent, to exclude the aid of medicine."[3] Similarly, Amariah Brigham (Superintendent from 1840-1842) suggested that laxatives, soothing baths, cathartics, and carotin oil (a soporific) had their place even in a facility devoted to treating the mind.[18] Moral treatment can thus be seen not as a replacement for medicine but as an overarching context, in which whatever insights the medicine of the period offered could be used most effectively. For example, there is evidence that doctors at the Retreat continued to prescribe bleeding, at least occasionally, into the 1840s. One prospective patient, in appealing to the state's governor for financial assistance for his stay at the Retreat, even went so far as to allude to the expeditious bleeding techniques applied by doctors there:

> I presume that the Physician at Hartford will go through a course of cupping so called, that is to draw the blood from my head by using the cupping glasses. We have no skillful Dr. in this place [New London] which can do it as well as they can at the Retreat."[19]

The persistence of bleeding and purging at the Retreat serves as a reminder that medical history cannot be viewed simply as a steady stream of progress from absolute barbarity to enlightened civility. In this way, uncertainty among the members of the emerging medical profession about what procedures might work persisted despite the significant advances which institutions like the Retreat seemed to represent. Moral treatment's emphases on creating an environment conducive to recovery, on the humanity of the patient, and on reasoned and sound medical judgement were indeed important departures from earlier treatments. However, the removal of people from their family environment, the strict regimen, and the occasional use of restraint and confinement at places like the Retreat may not have always helped them or represented improvement in their overall circumstances. Throughout the 19th century, some patients charged that they were wrongly institutionalized by family members for the sake of convenience; women who challenged their husbands' authority, for example, might find themselves subjected to a period of confinement in a mental hospital.[20] Many patients and their families, in letters to the Superintendent, exhibited an excessive filial deference which, even given the patriarchal value system of the day, was undoubtedly nourished by moral treatment's enshrinement of the medical doctor as a powerful father-figure responsible for governing the lives of his charges. Indeed, the English historian Andrew Scull goes so far as to argue that the rigid schedule, childlike treatment of patients, and stifling of individuality associated with asylum life may have represented a burdensome form of restraint which rendered the patient powerless and led to dependence and overall regression.[21]

Moral treatment was the product of a particular moment in time, and implicit within its implementation by the physicians of the Hartford Retreat were a range of ideas about the social, gender, racial, and ethnic divisions which

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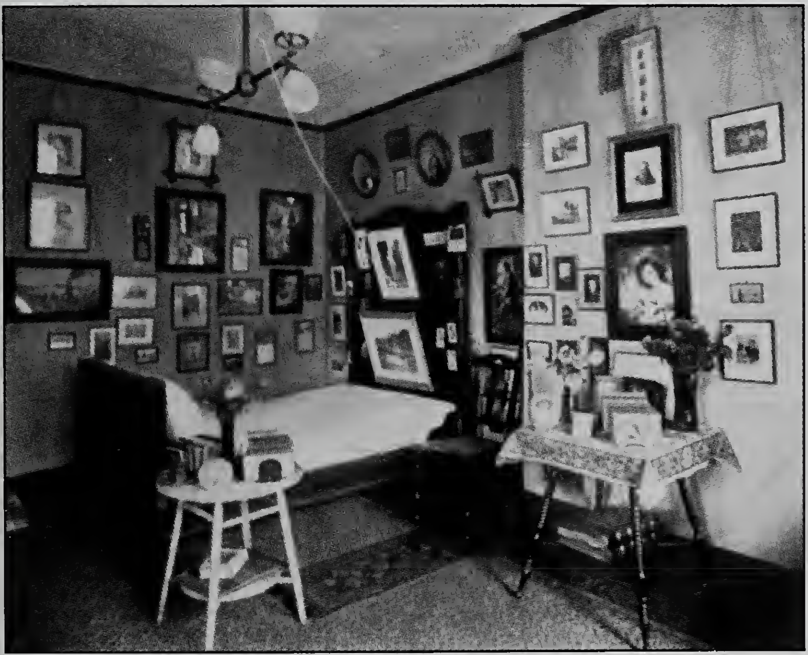
characterized 19th-century American society. No matter how humanitarian in impulse, institutions could not help but reproduce some of the inequities of the period. Most notably, the rigid views of gender roles that predominated among New Englanders in these years inevitably informed the doctors' decisions regarding diagnoses and treatments. While the separation of male and female patients in separate wings was viewed as a practical and logistical necessity, it was also assumed that men and women naturally should occupy separate spheres of activity, the former "in the world" and the latter "in the home." Consequently, male insanity was often attributed to public sources like "political excitement," while female insanity emerged as a result of the tensions which inevitably arose between the ideal of female domesticity and the realities of women's everyday life.[22] Similarly, the distinctions between the types of activities available to male and female patients for much of the 19th century (and indeed the first 50 years of the 20th) reinforced and in fact replicated prevailing conceptions of "manly" and "womanly" pursuits. Men, for example, might engage in productive pursuits in the joiners' shop or tend the extensive gardens of the Retreat Farm while women could "knit stockings and mittens, make shirts and sheets, quilt, etc., and assist in household duties."[15]



Patient bedroom at the Retreat, 1910.
A life-size recreation of this room is now on display at the Institute of Living.

Class distinctions at the Retreat for the Insane reflected those of society at large. While the Retreat for the Insane was the only facility in the state to care for chronically ill "lunatics" until 1868, and as such did accommodate the indigent insane, it tended overall to be an institution which cared primarily for those who had the means to pay. The weekly rates in 1850, for example, ranged from $3.00 to $12.00, depending on accommodations, at a time when wages for an attendant at the hospital varied between $15.00 to $20.00 per month. Indeed, the range of prices for the rooms themselves points to the distinctions which were made between patients who could afford a private suite with their own attendant and those who resided on the cheapest residential hall. The notion of egalitarian treatment, in fact, was never really considered. Since the idea of the Retreat was to provide people with a "normal" environment, replicating society's class differences seemed reasonable and appropriate. According to John Butler, superintendent in the early 1840s, those who earned "their bread by the sweat of their brow" were expected to pursue labor of a sort advantageous to the Retreat (ie, maintenance or grounds keeping.) Similarly, those "whose habits and pursuits have given them a distaste to labor, or who do not possess the requisite physical ability" should, he maintained, "seek occupation and diversion of mind in reading or social intercourse, or the varied amusements … which are provided for them."[16]

The economic burden represented by a stay at the Retreat resulted in a patient population that tended to be predominantly "old-stock" Yankees, rather than broadly representative of the ethnic and racial composition of both the state and the city of Hartford. For example, in 1900, some 57% of Connecticut's 908,420 residents were European immigrants or the children of immigrants. Among the Retreat's 138 patients that year, however, only 14, or 10%, were first- or second-generation Americans. Similarly, African-Americans were not systematically excluded as patients, but their numbers were always minuscule, despite an African-American community in the state (and especially in Hartford) that was slowly but steadily growing in the late 19th and early 20th centuries.[23]

Whatever its limitations, the principles of moral treatment continued to influence care at the Retreat, even as the term itself fell into disuse, and indeed they have become part of a modern psychiatric ethic. The calming physical environment was enhanced in 1861 when the grounds were redesigned by noted landscape architect Frederick Law Olmsted to provide a park-like setting; the curving pathways and majestic trees of the Institute's campus remain one of its distinctive assets. Olmsted's own understanding of the role of the environment was highly compatible with moral treatment; he claimed that by providing "the beauty of the fields, the meadow, the prairie, of the green pastures, and the still waters … [we gain] tranquility and rest to the mind."[24]

Eli Todd's antipathy to the use of restraints was another guiding principle that long persisted at the Retreat. Instructions to attendants throughout the 19th and 20th centuries emphasized that physical and narcotic restraints were to be employed only in the case of threatening or self-destructive behavior, and only as a carefully supervised last resort. The limited use of restraints, and indeed the complete absence reported in some years, became a badge of honor for the Retreat's superintendents.

Moral treatment's reliance on a paternalistic father figure also continued to be in evidence for many years at the Retreat. Superintendents exercised great authority not only in the medical treatment of individuals but also in steering the whole course of the institution according to their insights. Like mental institutions throughout the country, the Retreat was repeatedly made over by authoritative and frequently charismatic individuals at the top, men such as Henry Stearns (Superintendent, 1874–1905) and C. Charles Burlingame (Psychiatrist-in-Chief, 1931–1950).

Finally, moral treatment's insistence that the mentally ill were simply normal people suffering from a treatable disorder, and therefore ought to live as normal a life as possible, continued to guide the institution. Excursions for those able to make them were arranged in the 1830s, when Dr. Silas Fuller encouraged groups of patients to attend "balls" in Torrington (a long way from Hartford by horse and carriage), and reached a peak in the 1940s, when under Burlingame, the Institute maintained a fleet of Packard automobiles to sustain a regular program of country drives, shopping trips, and picnics. In the 1860s, a small building was erected on the grounds to serve as a kind of gentlemen's club, where patients could retreat for cigars and billiards; it also contained a "museum," cabinets of curiosities from around the world calculated to stimulate cultivated minds. And throughout its history, the institution maintained an extensive schedule of concerts, theatrical performances, and educational and travel lectures.

The establishment of a cottage system in the 1870s allowed some patients virtually to recreate a typical Victorian, domestic lifestyle within the secure grounds of the Retreat. The cottages, the most expensive living arrangement at the institution, provided not only individual bedrooms (as did other buildings) but also a parlor and dining room shared with a mere handful of other cottage residents. Calling them "a mode of life as nearly allied to home life as possible," Superintendent Stearns advocated the cottages as particularly appropriate for

> … the chronic insane who are not well enough to reside in their homes and with their friends, and yet, when living under the regulations of an asylum, and the daily observation of its officers, are able to conduct themselves with considerable propriety, and observe the etiquette requisite in ordinary society.[25]

Recreation and work activities formed an important part of life at the Retreat from the days of Eli Todd right up to the modern period. In part, these activities simply reflected the need to keep patients busy since they were typically resident for stays of long duration. Aside from this practical consideration, those in charge of the Retreat also held a firm belief in the therapeutic effects of "normal" activities. For many years the Retreat kept farm animals on the grounds or at a nearby satellite farm which certain patients tended. Athletics and exercise evolved with the introduction of croquet and tennis in the second half of the 19th century, followed by golf, swimming, badminton, bowling, stilts, and various gymnastics in the 20th century.

The quest for a life as close to "normal" as possible reached a heroic (or quixotic) intensity in the middle decades of the 20th century under the leadership of C. Charles Burlingame. A dyed-in-the-wool Anglophile, Burlingame built and remodeled buildings in the Tudor Revival style, constructed a row of English-type boutiques called Vauxhall Row for "guests"(the term applied to patients at this time) to shop in, and coined the name Graduate Club for employee housing. Burlingame also arranged for some patients to pursue college studies via correspondence courses at Columbia University, going so far as to hire cultivated college graduates as "tutors" to discuss their reading. Although Burlingame's regimen led to the Institute's exaggerated reputation as a "country club" for troubled members of well-to-do families, his practices were completely consistent with moral treatment's insistence on the restorative effects of participating in a normal life:

> Wholesome and entertaining activities make the Institute of Living a combined hospital, country club, and university campus, a place for mental and physical up-building in as normal an atmosphere as possible.… Life at the Institute does not imply a withdrawal from normal existence, but rather, a sojourn to a community with all the usual functions, services, and events found in any good community.[26]

Burlingame's ideal of a normal life was simply more "aristocratic" and English than most people's.

Moral treatment represented a radically new approach to addressing the problem of mental illness. Eli Todd and the other founders of the Retreat upheld a set of humanitarian beliefs—the dignity of the individual, the inappropriateness of excessive confinement and restraint, and the restorative power of a restful environment—even when some of the medical methods that continued to be used there, such as bleeding and purging, were traumatic and of questionable efficacy. The basic humane principles of the founders continued to influence the direction of the institution over the next 175 years, a time during which

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psychiatry and other mental-health professions emerged and assumed their present character.

In 18th-century America, little of an institutional nature had been done for the mentally ill, not because people were crueler in that age, but because they had little expectation that they could do anything more than restrain the more violent manifestations of insanity. In contrast, the founders of the Retreat were especially forceful in promoting the idea that the insane were suffering from treatable diseases or disorders. It is, in fact, the very optimism of the moral treatment movement that makes it so compelling and so historically significant, for surely without such a strong conviction that the mentally ill could be cured, little progress would have been made in psychiatry's continuing, and occasionally uncertain, search for effective therapies.

"Myths, Minds and Medicine: Two Centuries of Mental Health Care" is a permanent, museum-quality exhibit open to the public at The Institute of Living. It chronicles the origins of modern psychotherapeutic care from the days before today's psychopharmacological breakthroughs.

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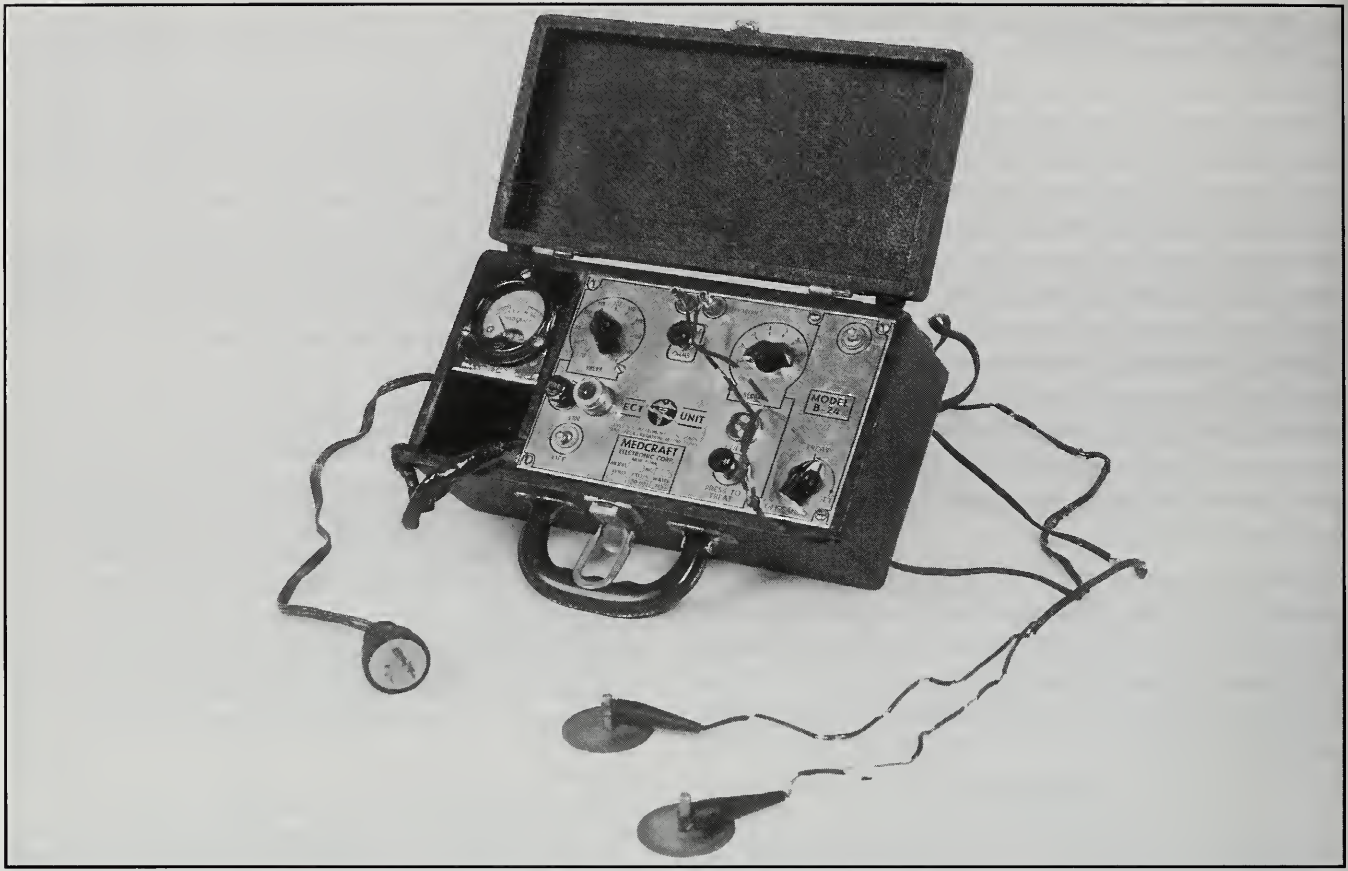
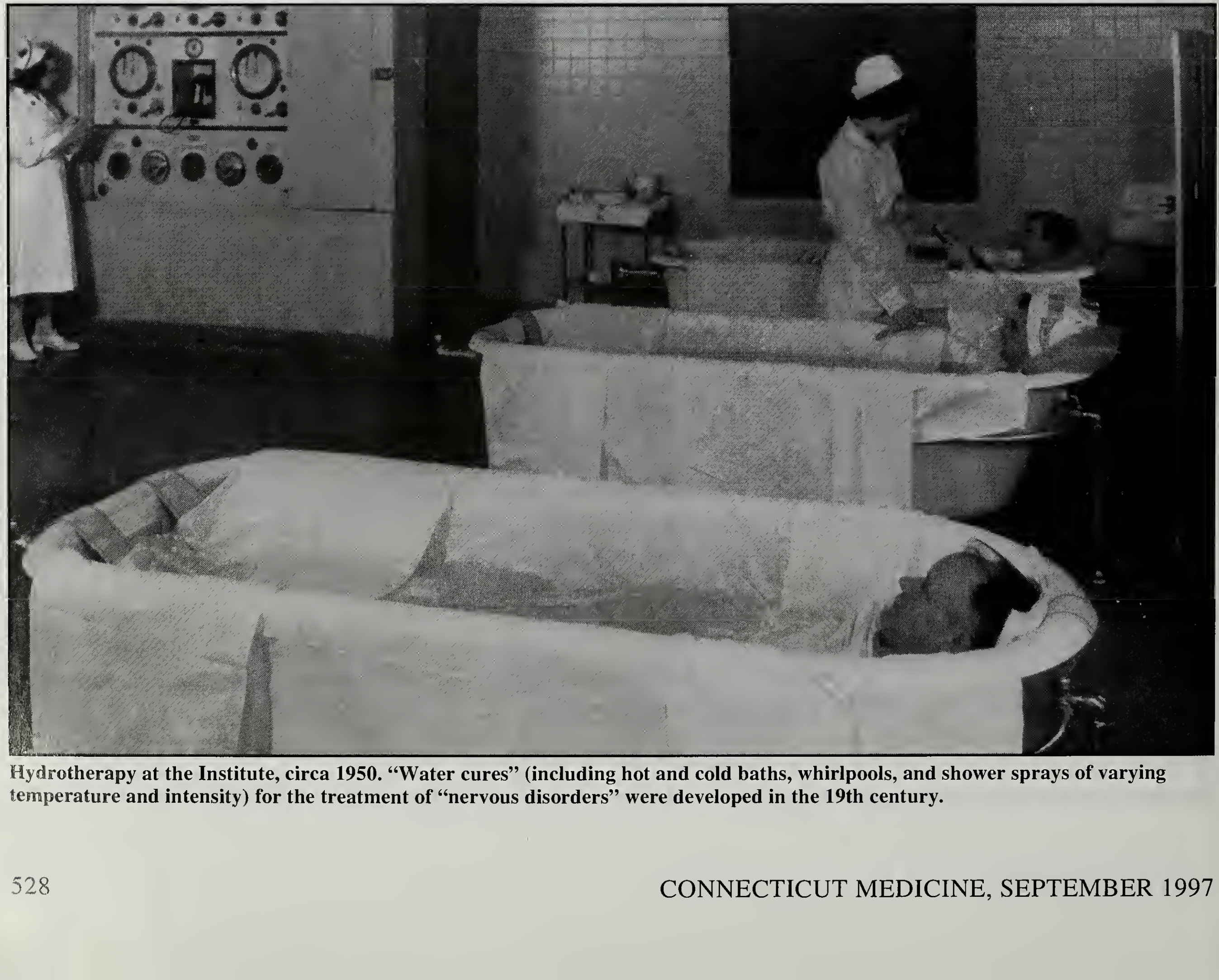


Electroconvulsive therapy unit, mid-20th century. (Now on exhibit at the Institute of Living.)



Hydrotherapy at the Institute, circa 1950. “Water cures” (including hot and cold baths, whirlpools, and shower sprays of varying temperature and intensity) for the treatment of “nervous disorders” were developed in the 19th century.

Primum non Nocere: Somatic Treatments for Mental Illness in the Early 20th Century

JAMES D. DUFFY, M.B. Ch.B., EDWARD BROWN, M.D.,
JASON ROSENSTOCK, M.D., AND JOSEPH SPILLANE, Ph.D.

> "Doctors are different in nature. One kind adheres to the old principle: first do no harm; the other one says: it is better to do something than nothing. I certainly belong to the second category" Gottfried Burckhardt (1891): 19th century pioneer in psychosurgery.[1]

Background

THE first half of the 20th century can arguably be considered the most disturbing and frightening period in the history of modern psychiatry. Positioned at the confluence of swirling social and scientific undercurrents, psychiatrists and their patients found themselves confronted with overwhelming challenges and frightful possibilities. The "moral treatment" movement of the early 19th century had been overrun by social forces that had disrupted social bounds and rendered the mentally ill as hapless wards of an increasingly disinterested, even hostile, state bureaucracy. Under the scientific guise of "moral degeneracy theory" that considered mental illness to be the inevitable consequence of the progressive decay of inferior human pedigrees, Western society embarked upon a policy of "institutional warehousing" that some historians have suggested was essentially a *forme-fruste* of moral eugenics.

Under this system of "institutionalized care," an indigent person incapacitated by mental illness in the early 20th century faced the prospect of years, perhaps even a lifetime, in mammoth state psychiatric facilities that had become a "social backwater" rather than a therapeutic experience. This atmosphere of therapeutic nihilism was compounded by the escalating number of elderly people suffering from untreatable medical and neurodegenerative disorders who were deposited in the state asylums by a social system with few other alternatives. In some state mental institutions almost 70% of patients were aged or physically disabled and suffering from no demonstrable mental illness. At Warren State Hospital in Pennsylvania almost three-quarters of such patients were dead within five years of their admission to the facility while other facilities reported that almost half of such patients died within one year of admission.[2]

The psychiatric casualties and social upheaval produced by the two cataclysmic World Wars of the first half of the 20th century swelled the numbers of patients in state asylums and further fueled their transition from the places of healing they had been during the early 19th century to "snakepits" capable of providing virtually no therapeutic opportunity. Confronted by society's apparent therapeutic nihilism, asylum psychiatrists had lost faith in their ability to cure mental illness and sought to shift their clinical focus and the theoretical foundations of their medical specialty. Influenced by Freud and other psychodynamic theorists, "They identified new careers outside of institutions; articulated novel theories and therapies, expanded jurisdictional boundaries to include not only medical disorders but the problems of everyday life; and defined a preventive role."[2] This professional metamorphosis essentially produced two camps within psychiatry ie, psychoanalysts who sought to discover a psychodynamic architecture of the mind and the somaticists intent on exploring the neural and physical substrates of complex behavior and its clinical disorders.

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Freud's world-view, resting within the affluent upper middle-class, rapidly seduced frustrated psychiatrists from their impotent role as asylum managers. Those psychiatrists who remained committed to a Kraepelinian world-view that sought to define a pathophysiology of mental illness found themselves on a "slippery slope" of decreasing resources and escalating patient numbers. Confronted by these realities, many of those psychiatrists who remained in the state institutions accepted the role of asylum administrator and made no attempt at providing meaningful therapeutic interventions. A few, however, embarked on the investigation of radical somatic treatments they believed might provide "magic bullets" capable of releasing their patients from the despair of mental illness.

This article provides a brief overview of the somatic treatments employed during the early 20th century. Although these treatments may appear cruel, irrational, or misguided, it may be argued, however, that they were the product of a social system whose neglect of the mentally ill created far greater pain.

Sleep Therapy (Narcotherapy).—"At the heart of this story is the torrent of sedatives that flowed from the workbenches of companies such as Bayer into the Asylum."[3]

The origins of modern psychopharmacology during the late 19th century can be traced to the emergence of the pharmaceutical industry which developed and promoted the use in asylums of the early alkaloids such as henbane, hyoscine, bromide, and chloral hydrate. However, although psychiatrists frequently prescribed the alkaloids as symptomatic treatments they were not considered to possess any particular therapeutic properties in mental illness.

The first attempt at defining a therapeutic property for the alkaloid sedatives was narcotherapy, a radical treatment that held a brief but powerful influence over modern biological psychiatry. The origins of sleep therapy can be traced to the ingenuity of a British general practitioner stationed in Japan, Gordon Macleod, who was confronted with the dilemma of attempting to transport safely a distraught English lady to the closest sanitarium over 500 miles away in Shanghai. Macleod decided to employ a prolonged bromide-induced sleep in the woman (a technique he had used to facilitate opiate withdrawal among wealthy British colonists). After several days of bromide-induced stupor the woman eventually reached Shanghai where, upon awakening, she was observed to be "without a trace of mental disturbance."[3]

Emboldened by this serendipitous "cure" Macleod in 1900 reported that another eight mental patients (one of whom died of aspiration pneumonia!) had been successfully treated with his "bromide sleep." Concerned about the neurotoxicity of bromide and the frequency of complications such as aspiration pneumonia, the psychiatric community did not pursue "sleep therapy" for another two decades, by which time the barbiturates had become a commonplace treatment for a variety of nervous complaints.

In 1922 the Swiss psychiatrist Jacob Kläsi reported that Somnifen, a combination of two barbiturates manufactured by Hoffmann-LaRoche, was capable of producing a "therapeutic sleep" which could benefit schizophrenic patients by "breaking the vicious cycle between psychic excitation, psychomotor activity and the increase in psychic excitation."[4] Kläsi's method of "narcotherapy" was to administer sufficient Somnifen to maintain patients in a deep sleep for as long as 11 days, during which time they would be periodically awakened to receive food and fluids. In an imaginative attempt to blend psychodynamic and biological models of mental illness, Kläsi suggested that periods of prolonged sleep facilitated a reintegration of the nervous system and made the patient more amenable to psychotherapeutic interventions. After receiving academic support from Eugene Bleuler,[5] narcotherapy was soon being investigated at clinics throughout Europe and in a review of the literature in 1925, Müller reported that in 310 cases treated with Somnifen: 11% had improved considerably, 27% improved somewhat, and in 56% no improvement was recorded. Within this cohort of patients 15 had died as a consequence of complications that included hypotension, aspiration pneumonia, and "Somnifen toxicity" characterized by fever, cyanosis, and cardiorespiratory collapse.[6] The very significant morbidity and mortality associated with Somnifen narcotherapy stimulated the development of other potentially less hazardous sedatives including "Cloettal Mixture" (containing paraldehyde, amylenhydrate, chloral hydrate, alcohol, and isopropylallylbarbituric acid). Unfortunately, Cloettal proved no more therapeutic and equally as dangerous as Somnifen, as indicated by a report from the Soviet Union that of 28 patients who received "Cloettal narcotherapy," two died from complications of treatment and six others developed serious side effects early in treatment.[7]

Fueled by the painful reality that there were no effective treatments available for schizophrenia, the debate over the efficacy and safety of narcotherapy continued until the late 1940s when the introduction of apparently less harmful, but no more effective, treatments such as fever therapy and insulin-induced hypoglycermic coma provided psychiatrists with other therapeutic alternatives.

Cocaine.—"No remedy in modern times—probably in any age of the world—has become famous in so short a time as cocaine" (Bartholow,1891)[8]

Although the medicinal effects of the coca leaf had been recognized in South America for many centuries, the first scientific report of its therapeutic properties as a local

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anesthetic appeared in 1884.[9] Within just a few months of this first scientific report, cocaine was prescribed to patients suffering from a wide range of medical and psychiatric conditions. Sigmund Freud's early investigations into cocaine suggested that the drug was a powerful psychostimulant, and it soon became widely prescribed as a "general tonic" for patients suffering from chronic debilitating diseases, including tuberculosis and syphilis. Cocaine soon gained popularity as a panacea for the ills inflicted by the feverish activity of the "Gilded Age" aptly described by Searle in 1881, "Our climate is stimulating, our habits are stimulating, the struggle for existence is stimulating, and human nature is over-driven on all sides."[10]

In 1901, Mortimer's survey of 369 physicians throughout the United States revealed the most common therapeutic uses for cocaine were as follows: debility (141 physicians), exhaustion (133), neurasthenia (124), and overwork (106). However, although cocaine was prescribed mostly to outpatients, the drug was also extensively prescribed within mental hospitals where it was reported to exhibit a prompt therapeutic effect on melancholics.[11]

Through its action as a psychostimulant, cocaine also found a rather surprising use as a treatment for the rising surge of opiate addiction that occurred during the late 19th century. It soon became evident however that many patients who were prescribed cocaine began chronically to abuse the drug with the typical cocaine abuser described as a young male "brain-working professional."[9]

The therapeutic use of cocaine declined almost as quickly as it had erupted. By the beginning of the 20th century, physicians were becoming e aware of the drug's side effects and addictive potential and rapidly abandoned its therapeutic applications.

Malaria Therapy and Fever Therapy

By the late the 19th century, general paralysis of the insane (GPI) as neurosyphillis was referred to during the 19th century, had become the mental health scourge of the Western world. As many as 20% of patients admitted to mental health facilities such as the Institute of Living suffered from GPI where they faced a dismal prognosis characterized by progressive physical and intellectual decline and an inevitably painful demise. The controversy that had surrounded the etiology of monomania (the term applied to the typical behavioral disorder associated with neurosyphillis) for several centuries was finally resolved in 1913 when Noguchi and Moore identified the treponema spirochaete in the brains of paretic patients.[12] Unfortunately, the early enthusiasm for salvarsan (an arsenical compound) as a treatment for GPI proved unfounded as clinicians became increasingly aware of its severe side effects. Psychiatrists therefore were confronted by the unusual and frustrating situation of knowing the etiology of a common neuropsychiatric disorder but not possessing any effective treatment, and this therapeutic lacuna provided fertile ground for radical new treatments such as fever therapy.[12]

The apparent therapeutic efficacy of fever in mental illness was first described by Rosenblum in 1876 who reported that 11 of 22 various psychiatric patients experienced an apparent remission of their mental illness following an attack of recurrent fever.[12] Over the next 20 years a series of case reports further supported fever as a therapeutic option for mental illness, and in 1887 Wagner-Jauregg published a review of the literature in which he described 163 patients whose psychoses had remitted following febrile illnesses that included typhoid, intermittent fevers, and erysipelas.[13] Following the publication of his review, Wagner-Jauregg began experimenting with various means of inducing fever that included injections of blood from patients suffering from erysipelas, tuberculin preparation, boiled milk, boiled protein, and sodium nulleinate. He soon realized that fever therapy was especially effective in treating general paresis and began to focus his experiments on this group of patients. Wagner-Jauregg and others had commented that the incidence of neurosyphilis was particularly low in regions where malaria was endemic. Therefore, when he encountered a "shell-shocked" soldier with malaria who had been evacuated to his asylum during World War I, Wagner-Jauregg decided to seize the opportunity to test his hypothesis that the plasmodium might have therapeutic potential and injected the malaria-infected blood of the unfortunate patient into nine paretic residents of the facility.[14] Six of these nine patients exhibited significant improvement and although one outpatient died and four relapsed, Wagner-Jauregg felt the response justified further experimentation with malaria therapy. News of the new therapeutic option for the syphilitic scourge spread quickly and many asylums, including prestigious private institutions, fostered mosquito colonies from which they could harvest the "therapeutic plasmodium." Indeed, the husbandry of a "potent stock" of plasmodium-infected mosquitoes became a specialized science, leading many of psychiatry's leaders to suggest that the treatment should be restricted to facilities capable of maintaining the highest quality controls.[12] In 1926, a literature review revealed that of 2,460 patients who had received the treatment 27.5% were greatly improved and 25.6% were moderately improved.[15] Malaria therapy was also lauded by many of the leading neurologists of the generation including Merritt and Adams who, as late as 1946, insisted that malaria therapy was "the simplest and most effective method of treatment of paretic neurosyphilis."[16]

Although in retrospect we may consider it to have been inappropriate to treat one condition by inflicting another potentially fatal one, malaria therapy was clearly the safest and most effective treatment for GPI available to physicians during the first half of the 20th century. The treatment's impact on contemporary medicine is illustrated by the award of the Nobel Prize to Wagner-Jauregg in 1927. More than anything perhaps, malaria therapy suggested to psychiatrists of that time that somatic therapies might offer promise for mental illness, and thus ended the therapeutic nihilism of their generation.[12]

Insulin Coma Therapy.—In 1927, just five years after its discovery by Banting and Best, a serendipitous clinical observation suggested that insulin might be a powerful therapeutic agent for treating mental illness. Manfred Sakel, a young Viennese psychiatrist working in an elite private clinic that specialized in treating opiate addiction among Austrian society's more affluent members, noted that small doses of insulin appeared to be effective in reducing the symptoms of the "cold turkey" experienced by residents of the sanitarium. However, following several accidental "overdoses" of insulin that resulted in coma, Sakel noted that the patients emerged from their coma less agitated and no longer craving morphine.[17] Indeed, some exhibited such apparently profound alterations during their period of insulin-induced coma that one of Sakel's colleagues, Karl Dussik, commented, "The personality of the patient can often be changed so entirely during the hypoglycemic reactions that it seems as though the glycopenic treatment has created a new being."[18]

Building on these early clinical observations, Sakel induced insulin coma in several hundred patients suffering from a wide range of psychiatric disorders. Under Sakel's protocol, patients received escalating doses of insulin until a deep coma characterized by fixed dilated pupils, absent deep tendon reflexes, and respiratory depression and lasting at least one hour was achieved. The coma was aborted with intravenous glucose and/or gastric lavage with a glucose solution. This procedure was repeated at least six days each week for as long as three months until therapeutic efficacy (or lack thereof) was accomplished. Insulin coma therapy (ICT) was not without risk, however, and carried a mortality of approximately 1%; however, the dearth of other potentially effective treatments for the chronically mentally ill apparently justified its use.[19]

Sakel considered ICT to be a particularly effective treatment in schizophrenics, and in 1930 he published a paper claiming an 86% cure rate in 600 schizophrenics treated with insulin coma.[17] Although Sakel's research was fraught with methodological problems, insulin coma rapidly gained acceptance in Europe and the United States. At the American Psychiatric Association meeting in Pittsburgh in 1937, Sakel claimed that insulin coma had produced thousands of "cures" and reported that it was most effective in early schizophrenias. His audience was clearly impressed. ICT was described as "one of the greatest advances ever made in psychiatry" and as a treatment that had revolutionized psychiatry to the point that it was "standing at the threshold of a new dawn."[19] Although ICT was welcomed in some psychiatric quarters (particularly in Switzerland and the United Kingdom) it was received with skepticism in others. Despite this skepticism, within a few years almost every psychiatric hospital in America was experimenting with ICT and claiming success, particularly for schizophrenia, the perennial "bugbear" of psychiatry.

Concerned about the risks of ICT, Charles Burlingame, superintendent of the Hartford Retreat (renamed The Institute of Living during Burlingame's tenure), cautioned his fellow psychiatrists that "to claim it (ICT) as a panacea or to accept it without qualification or criticism as a specific for schizophrenia is neither scientific nor sensible, in view of the small number of cases in which it has been tried."[20] Despite his concerns Burlinghame did support the use of ICT at the Hartford Retreat and described a few cases in which it had proven to be an effective treatment. Characteristic of the therapeutic pragmatism of his generation, Burlingame did admit that ultimately "results are all that count."[20]

The considerable staffing and resources necessary to undertake ICT, together with the emergence of other somatic treatments, most particularly chlorpromazine in 1954, heralded its decline and demise by the late 1950s.

Psychosurgery.—"If the soul can survive death it can surely survive a leucotomy." (Brit M J 1952)

The modern genesis of psychosurgery can be attributed to Gottfried Burckhardt, a little known psychiatrist working at a community asylum in Switzerland. Building upon an amalgam of the localizationist and connectionist models of Gall and Wernicke respectively, he developed the simple but reasonable hypothesis that disruption of the neural circuitry subserving speech would be effective in reducing auditory hallucinations.[1] In a series of surgical procedures, Burckhardt produced several small cortical lesions in six patients who were suffering from intractable auditory hallucinations. In 1891, at a conference in Berlin, Burckhardt reported that two of the six patients had been able to return home, one had died of complications, and two had developed postoperative convulsions.[1] The audience response to Burckhardt's presentation was so hostile that he was essentially exiled from academic psychiatry, and he returned to the relative obscurity of his position at the small Swiss asylum. Burckhardt's academic isolation also heralded the temporary demise of psychosurgery which, apart from some covert activity in Russia, would not re-enter the clinical arena for almost half a century.

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Psychosurgery's revival 50 years later was engineered by Egas Moniz, professor of neurology at the University of Lisbon. Frustrated by two failed nominations for the Nobel Prize in Medicine (for his work in cerebral angiography), and disappointed in his political aspirations by the ascendancy of the Salazar government in Portugal, Moniz attended the Second International Neurological Congress in London in 1935 determined to reignite his sagging academic career. After hearing a presentation by Carlyle Jacobsen from Yale on the behavioral effects of frontal lobotomy in chimpanzees, Moniz returned to Lisbon intent upon exploring the therapeutic efficacy of frontal lobotomy in mental patients. Since Moniz had received no surgical training and his hands were crippled by gout, he recruited a young neurosurgeon, Almeida Lima, to assist him with his daring work. Within just a few months of experimenting with cadavers, Moniz and Lima injected pure alcohol into the frontal lobes of a chronically delusional 63-year-old woman recruited by the professor of psychiatry in Lisbon, Sobral Cid. As became typical of most psychosurgical "research studies," the patient underwent no formal psychiatric or cognitive assessment either before or after her psychosurgery, and, in fact, did not undergo any psychiatric evaluation until several months after the procedure.[21] Remarkably, apart from a brief, mild postoperative fever the woman experienced no complications. Emboldened by the apparent safety of their new procedure, Moniz and Lima pressed ahead with a total of 20 patients within the next few months. In March 1936, just four months after the first operation, Moniz presented his findings to a neurology conference in Paris and within a year had published a monograph and scientific articles in five countries (all without acknowledging Almeida Lima!). Moniz reported that in his patient cohort (consisting of individuals with various and poorly defined psychiatric diagnoses), seven patients had been "cured," seven were improved, and six were unchanged.[22] Although Moniz may have been somewhat successful in convincing the international psychiatric community that psychosurgery offered a safe and effective treatment, the new treatment made Portuguese "psychologists shudder and psychotherapists angry." Despite resistance from his peers, Moniz performed another 18 frontal leucotomies over the next six months, producing more extensive lesions with a modified "apple corer" that removed deep tracts of tissue from the frontal lobes. Over the next few years Moniz dedicated himself to popularizing psychosurgery and immediately began canvassing for the Nobel Prize that had eluded him a decade earlier. However, his early attempts in this regard proved fruitless and had it not been for an unlikely ally in the United States, Moniz and his procedure would most likely have been forgotten.[21]

A psychosurgical procedure, mid-20th century. On display at the Institute of Living.

In 1936, Walter Freeman a neuropathologist turned neurologist at George Washington University Medical School in Washington, D.C., received a copy of the Moniz monograph. He and Moniz had met on several occasions, and Freeman, who had spent several years as the neuropathologist at St Elizabeth's Hospital, was immediately intrigued by the concept of psychosurgery. With the assistance of a young neurosurgeon, James Watts, Freeman performed his first prefrontal lobotomy on 13 September 1936. The surgery proved a harrowing experience for both surgeons as significant hemorrhaging occurred both at the time of the procedure and five days postoperatively. In what would prove in retrospect to be an ironic remark, an obviously unnerved Freeman commented that "This is certainly not a procedure that should be given out for wholesale application."[23] Despite their anxieties about the safety of psychosurgery, within the next six weeks the pair performed six more procedures on a variety of patients drawn from Freeman's private practice (at that time the majority of private neurological practices consisted of patients suffering from psychiatric illness). Flush with enthusiasm, they presented their clinical case series (essentially consisting of Freeman's subjective impressions of patients before and after lobotomy) to a meeting of the Southern Medical Association. The audience reception was initially extremely hostile. However, just when it appeared that Freeman would follow the same fate as Gottfried Burckhardt 50 years earlier, Adolf Meyer, who was chairman of psychiatry at Johns Hopkins Medical School and "Dean" of American psychiatry at that time, stood up and made a statement in support of further clinical research in psychosurgery. Unwittingly, through his "academic validation" of psychosurgery, Meyer sparked a decade of rampant, unbridled experimentation in destructive psychosurgical procedures.[23]

Although Freeman and Watts initially attempted to refine frontal lobotomy and evaluate scientifically the therapeutic benefits of the procedure, Freeman developed an evangelical fervor for psychosurgery and began a personal crusade to popularize it as a panacea for the hopelessly insane. Convinced that psychosurgery should be performed as early as possible in the course of the patient's mental illness, in 1946 Freeman developed a procedure called transorbital lobotomy in which an icepick was forced upwards through the orbital plate and into the frontal lobes. Freeman hoped that his new "user-friendly" procedure negated the necessity for a neurosurgeon and could be quickly taught to psychiatrists practicing in state asylums, thereby offering a therapeutic salvation to the hundreds of thousands of chronically ill mental patients housed in their back wards. Freeman's enthusiasm for transorbital lobotomy appears to have usurped the scientific diligence that had characterized his earlier life, and he soon began performing his new procedure in his Washington, D.C., office. Understandably, Watts could no longer tolerate his partner's amateur surgical bravado and distanced himself from any further involvement in psychosurgery.[21]

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Over the next five years, however, Freeman found the receptive audience he had anticipated among the superintendents of state mental hospitals. Performing as many as two dozen transorbital lobotomies in a day, Freeman attempted to teach the procedure to as many psychiatrists as possible. Within many of these state facilities psychosurgery became part of the treatment program for patients who failed to respond to other less drastic somatic treatments, regardless of diagnosis. A measure of psychosurgery's popularity is the fact that between 1942 and 1949 more than 10,000 procedures were performed in the United States. The paucity of record keeping suggests the figure may have been even higher.[21]

Running counter to Freeman's rampant unscientific clinical crusade, John Fulton, who was professor of physiology at Yale (and had collaborated with Carlyle Jacobsen on the initial animal studies of frontal lobotomy), attempted to establish a scientific basis for the study of psychosurgery. Drawing upon his extensive knowledge and academic credentials, Fulton provided the academic oversight in several studies that sought to examine the effect of small, targeted lesions on mental illness. These reasoned scientific endeavors included the Columbia Greystoke study, anterior cingulectomy (developed by Sir Hugh Cairns at Oxford), and stereotactic thalamotomy (developed by E.A. Spiegel in Philadelphia). Although these studies provided some interesting insight into the neural dysfunction subserving obsessive-compulsive behavior, only cingulotomy has remained a viable procedure beyond the 1960s.[21]

Psychopharmacology.—The modern era of psychopharmacology began in 1953 with the introduction of 4560 Rhône-Poulenc (chlorpromazine). This new psychotropic agent offered psychiatrists an effective method of treating their agitated patients and resulted in the rapid demise of psychosurgery and the other radical somatic treatments. Embarrassed by the silent victims of unbridled psychosurgery, psychiatry rapidly distanced itself from this treatment modality, and Walter Freeman became a professional pariah who eventually worked as a private psychiatrist in northern California. Although one might question the scientific validity of his work, Freeman was clearly motivated by a concern for the welfare of his patients. This is exemplified by the fact that, during his later life, he spent his vacations traveling the continent in an attempt to track down and ascertain the progress of his psychosurgical patients.

Concluding Remarks

This brief description of some of the somatic psychiatric therapies provides metaphors that illustrate the tensions that have, and continue to be, central to psychiatry's identity and role within medicine and society. Some critics, including Thomas Szasz, have argued that the somatic therapies simply represent the abusive behavior of psychiatrists grown insensitive and brutal in their role as "social nannies" for the unwanted. According to this argument, psychiatry's recent advances in understanding the biological basis of mental illness and the development of more effective and less harmful somatic treatments simply represents a refinement of this sinister agenda. This representation of psychiatry and its motivations is based on a failure to appreciate the powerful social and scientific forces that have impinged upon the field. It is our position that the development of psychiatry (and psychiatric treatments) can only be understood in the context of three organizing frameworks, ie:

1. *Western society's shifting social ethic has repeatedly redefined the level of its commitment to the care of the mentally ill.*

Throughout its 200-year history, the scope and type of treatment that psychiatry has provided to the mentally ill have, in large part, been determined by shifting societal expectations and restraints. The breakdown in the community that has occurred during this period has produced a "societal paranoia" that has marginalized the mentally ill and the "alienists" who have attempted to treat them. However, despite Western society's "ethical sea changes" of the last 200 years, psychiatry has been remarkably flexible and inventive in its attempts to develop therapeutic opportunities for the mentally ill.

2. *Medicine's inability to apply pathophysiological models to mental illness.*

Although the early somatic therapies may, in retrospect, appear to have been simplistic, perhaps even bizarre, they were developed without the benefit of any pathophysiological model capable of explaining mental illness. Physicians interested in treating mental illness have been forced to rely on sometimes crude clinical observation when assessing the utility of a therapeutic intervention. This approach led to serendipitous clinical observations that were inevitably biased by the particular perspective of the clinician and the environmental conditions under which they were observed, eg, frontal lobotomy appeared to be helpful in reducing agitation in patients who severely disrupted the milieu of the psychiatric facility and threatened the welfare of other patients.

3. *Psychiatry's appreciation of the intense suffering experienced by the mentally ill.*

Although, during most of its history, psychiatry had been unable to develop any robust "scientifically sustainable" models of mental illness, it has remained committed to its mandate of relieving the suffering of its patients. This empathic sensitivity to the suffering of the mentally ill has fueled psychiatry's sometimes scientifically naive attempts to develop "great and desperate cures" for mental illness.[24] The arguments of Szasz and the "antipsychiatry lobby" are fatally flawed in their failure to appreciate the suffering produced by mental illness and the role of psychiatrists, as physicians, in attempting to relieve this suffering.

This brief overview has described a few of the somatic therapies employed by psychiatrists during the early 20th century. Through a deeper understanding of the scientific and social pressures that influenced the emergence of these treatments we can develop a keener insight into the current and future treatments that medicine develops as part of its mandate to relieve the suffering of the mentally ill.

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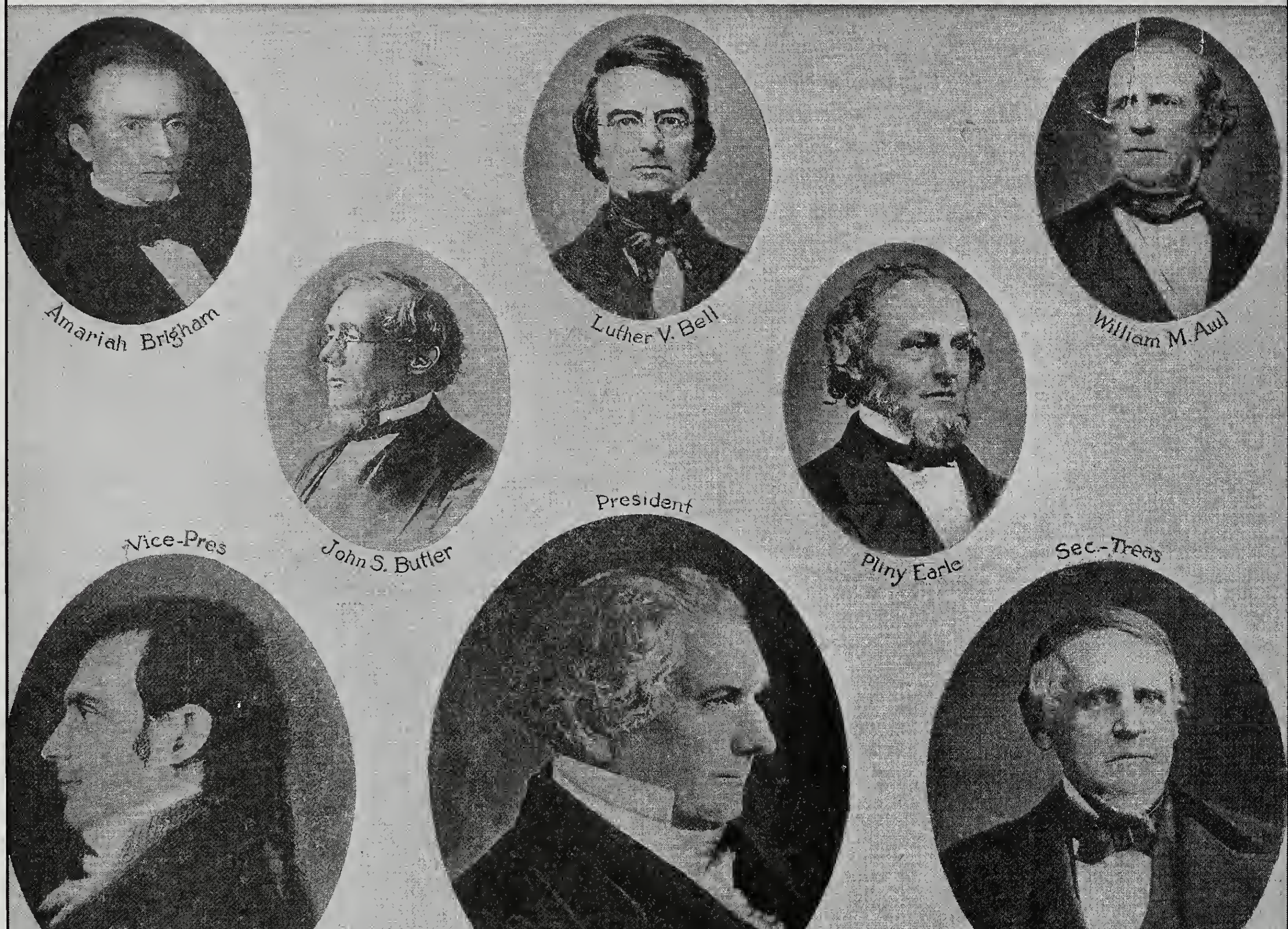
* Psychiatry's search for somatic treatments is explored further in the text "Modern Psychiatry's Search for the Magic Bullet" to be published by the American Psychiatric Press Inc.

The Thirteen Founders



The Association *of* Medical Superintendents *of* American Institutions *for* the Insane 1844–1981
American Medico-Psychological Association 1892–1919.

Of the 13 founders of the Association of Medical Superintendents of American Institutes for the Insane (precursor of the American Psychiatric Association), two—Drs. Brigham and Butler—were early superintendents of the Hartford Retreat.

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Dynamic Therapy in the Decade of the Brain

GLEN O. GABBARD, M.D.

ABSTRACT—Data from diverse sources suggest that psychotherapy works by changing the functioning of the brain. This observation is part of a larger phenomenon involving neural plasticity. An extraordinary amount of research is demonstrating that neither gene expression nor the anatomy or physiology of the brain is static. Environment and genetics are in an ongoing interaction with one another, and this mutual influence informs our latest understanding of how psychotherapy appears to affect brain functioning. Research on disorders such as schizophrenia, obsessive-compulsive disorder, cancer, and panic disorder provide convincing data in this regard. For a full understanding of the etiology and pathogenesis of mental illness, as well as its treatment, the psychodynamic dimension of meaning must be incorporated.

THE designation of the 1990s as the "decade of the brain" reflects the excitement about advances in the neurosciences that have made far-reaching contributions to our understanding of mental illness. However, just as psychiatry went through a period of psychoanalytic reductionism in the 1950s and 1960s, the field is now in danger of a biological reductionism that neglects subjective experience, idiosyncratic meanings, and interpersonal processes by focusing on molecular genetics and neurotransmitters.

Abbreviations Used in Text
ACTH = adrenocorticotropic hormone
MHPG = 3-methoxy-4-hydroxyphenylglycol
CSF = cerebral spinal fluid

Psychiatry is at risk of polarizing itself into a "mind" and a "brain" science. Obviously, mind and brain are inseparable. The mind can be considered as the expression of the activity of the brain.[1] While the two represent domains that have their own language and can be separated for purposes of discussion, they are always integrated in clinical practice. Mental phenomena arise from the brain, but subjective experience also affects the brain, as do influences from the environment. Indeed, the burgeoning field of neural plasticity recognizes that neither the brain nor the genetic makeup of an individual is static. Both are constantly influenced by the environment, and they in turn affect what the environment contributes.

Part of the polarization of mind and brain is related to a mythological view of treatment: namely, that psychotherapy is a treatment for "psychologically based" disorders, while "biologically based" disorders should be treated with medication. In a series of communications,[2-4] I have pointed out that the integration of the psychosocial and biological is the essence of psychiatry and that psychotherapy must be effective by changing brain functioning. In this report, I will summarize both research and clinical data that lead to the inescapable conclusion that psychotherapy has an impact on the brain. In addition, I will also discuss the unique contribution of dynamic therapy to clinical diagnosis and treatment, even in an era that is dominated by neuroscience.

The Interaction Between Brain and the Environment

In a series of experiments with the marine snail *Aplysia*, Kandel has demonstrated how synaptic connections can

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be permanently altered and strengthened through the regulation of gene expression connected with learning from the environment.[5-8] He delineated the mechanism by which *Aplysia* learns from the environment at the synaptic level. He referred to this as long-term potentiation (LTP). This process begins with an influx of calcium into the postsynaptic cell, which then activates a cascade of three discrete kinases. These in turn release nitric oxide as a gas that diffuses backwards to the presynaptic terminal and facilitates neurotransmitter release.

Kandel has suggested that similar mechanisms must be involved in psychotherapeutic work. He compares the psychotherapist to a teacher who helps the individual learn new ways of thinking about self and others. In the marine snail, Kandel observed that the synapses actually double or triple in number as a result of such learning processes. He suggests that psychotherapy might make similar neuroanatomical changes in the synapses. He also stresses the dynamic plasticity and malleability of self-representations and object representations and how that view parallels our understanding that the brain itself is a dynamic and plastic structure.

Studies with mammals have also shown that neuroanatomical changes take place with learning. Greenough et al demonstrated that rats raised in a social environment that requires complex learning to survive have significantly greater numbers of synapses per neuron compared to rats raised in isolation.[9] These findings fit with the new field of developmental cognitive neuroscience, which is studying the ways in which environmentally derived activity drives the development of dendrites so that they conform to cognitive schemes for the construction of mental representations. Of course, the innate characteristics of the individual's genetic makeup constrain to some extent the impact of environmental factors. In other words, the brain is certainly not a blank screen or *tabula rasa*. However, in the developing brain, undifferentiated neural systems are progressively differentiated based on critical cues from the environment.

Neural connections between cortex, limbic system, and autonomic nervous system become connected into circuits in accordance with specific experiences of the developing organism. Hence emotion and memory circuits are linked together because of consistent patterns of connection due to stimuli in the environment. This developmental pattern may be summarized as follows: "Neurons that fire together, wire together."[10]

The idea that neural plasticity persists throughout life obviously has profound implications for psychotherapeutic interventions in psychiatry. In other words, the learning that takes place in psychotherapy may bring about significant brain changes. Research on less evolved species is providing some provocative models. A group of neurobiologists recently identified a neuron in crayfish whose response to the neurotransmitter serotonin differs dramatically depending on the animal's social status.[11] This particular neuron controls the tail-flip reflex in crayfish. In a dominant animal, serotonin makes a neuron more likely to fire. However, the same neurotransmitter suppresses firing in subordinate animals. The response to serotonin is not permanently encoded. If the animal's social status changes, the effect of serotonin on the neuron also changes. For example, when two previously subordinate crayfish were placed together, one would eventually become dominant. When later tested, the neuron's response to serotonin was consistent with dominant animals (ie, serotonin stimulated the tail-flip reflex rather than suppressing it). These findings suggest that the perception of one's place in a relationship may influence the activity of neurotransmitters and their effect on the brain.

Alterations in relationships have also been shown to produce lasting biochemical changes in rhesus monkeys.[12] In his Bethesda laboratory, Suomi separated infant rhesus monkeys from their mothers and found that they developed behavioral abnormalities, which suggested a good deal of social anxiety. These infants were then exposed to peers that had been raised by their own mothers. He referred to these peers as "therapist monkeys" because interactions with these peers reversed the behavioral abnormalities. The infants reared by the peers had higher levels of cortisol and ACTH in response to separation and lower CSF levels of noradrenalin. Higher levels of 3-methoxy-4-hydorxyphenylglycol (MHPG) were also observed. The "therapist monkeys" were not entirely successful in their "therapy," however, because the behavioral abnormalities of the young monkey returned when stressful or novel situations were encountered. Hence Suomi concluded that therapist monkeys were not as effective as actual mothers in serving as a secure base.

Suomi also noted that about 20% of the infants in his monkey colony who were reared by mothers reacted to brief separations with increased cortisol and ACTH, depressive reactions, and exaggerated noradrenalin turnover. He assumed that this inborn vulnerability was on a genetic constitutional basis. He then identified unusually nurturant mothers within the monkey colony and placed the infants with the inborn vulnerability with those "super mothers." He observed that inborn vulnerability to separation anxiety was overcome when the infants were rereared by these extraordinarily nurturing mothers, and the same monkeys who had been born with a disadvantage became leaders in the social hierarchy. One can speculate from these data that the quality of early relationships can compensate for genetic constitutional vulnerability.

Mild trauma also appears to reduce certain biochemical and behavioral changes. Rosenblum and Anderson ran-

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domly assigned infant monkeys either to normal mothers or to mothers temporarily made anxious by an unpredictable feeding schedule.[13] Those with anxious mothers showed diminished capacity for normal social interaction and were socially subordinate. However, the changes did not manifest themselves until adolescence, confirming the psychoanalytic idea that disturbances at early phases of development can produce delayed changes of a psychopathological nature in adolescence and adulthood. The behavioral changes were also associated with serotonergic and noradrenergic alterations. Genetic influences, of course, were ruled out by random assignment. This study suggests that milder forms of disturbance such as the mother being anxious about the source of food could also produce parallel changes in human subjects.

A Conceptual Model of Psychopathology

The interaction between environment and brain illustrated by these studies is closely linked to an emerging understanding of the etiology and pathogenesis of major psychiatric disorders. Kendler's twin study on major depression is an eloquent illustration of this principle.[14,15] In studying 2,164 members of female–female twin pairs, he identified that recent stressful events were the single most powerful risk factor for an episode of major depression. Genetic factors were substantial but not overwhelming. Interpersonal relations and a temperament of neuroticism also appeared to be major influences on the development of major depression. He followed his cohort over a period of 17.3 months and 14% of them had major depressive episodes. He found that the four most powerful predictors of a major depression in the month of their occurrence were death of a close relative, assault, serious marital problems, and divorce or breakup of a marriage. He noted that genetic factors appeared to alter the sensitivity of individuals to the depression-inducing effect of stressful life events. Those with the lowest genetic risk had only 0.5% probability of depression onset per month if they were unexposed to a life stressor. If they did suffer a severe stressor, their probability of depression episode increased to 6.2%. Even those with the highest genetic risk had only a 1.1% probability without a stressor, but the risk skyrocketed to 14.6% if exposed to a severe life event. Kendler and his colleagues concluded that environmental risk factors influenced the risk of major depression in individuals at both low and high genetic risk. Moreover, the impact of environmental stressors is substantially greater for individuals at high genetic risk than for those at low genetic risk. A major point emerging from the study was that gene expression is not static but reacts to and interacts with environmental experiences. Throughout development there is a dynamic interplay between genetic expression and the environment. Reiss et al have pointed out that there are now extensive data supporting the idea that heritable characteristics of children actually shape their relationships with their parents and siblings.[16] These genetic influences on relationship systems appear to be a critical component of genetic influence on psychopathology. Another way to conceptualize this effect is that genetic influences on some types of psychopathology may be dependent on the mediation of social processes. Hence one cannot say that either biological or psychosocial processes are primary. Neither are they independent. They are constantly intertwined. The child's genetic makeup influences the way the parents relate to the child, and the way the parents treat the child influences that child's developing brain.

In this stress-diathesis model of psychopathology, it is important from a psychodynamic perspective to incorporate meaning. In other words, to understand how a stressor affects an individual patient, the clinician has to take into account how the individual interprets the meaning of the stressor and its significance. Research has shown that a stressor is more likely to produce depression, for example, if its content matches the area of the patient's self-definition.[17] Events that are interpreted to mean depletion of self-worth and the expectation of inability to replenish needed supplies are more likely to cause depression.

In addition, the importance of meaning is not diminished by the presence of biological symptoms. The auditory hallucinations of a person with schizophrenia may largely be generated by alterations in neurotransmitters in the brain. However, the content of those hallucinations will have idiosyncratic meanings that are particular to that patient. Often preexisting psychodynamic conflicts attach themselves to biologically driven symptoms, and the symptoms then function as a vehicle for the expression of the conflicts.[2]

Understanding the meaning that symptoms have for a patient may be critical to the overall treatment plan. Many patients do not take medications because of the particular meaning the medication or the illness has to them. One can apply psychodynamic principles, such as transference, countertransference, and resistance, to the understanding of compliance problems with medication. One might call this form of practice dynamic pharmacotherapy.[18] A principle from psychotherapy, the therapeutic alliance, has recently been found to have great meaning even when prescribing medication. Krupnick et al examined the therapeutic alliance in the outcome of 250 depressed outpatients in the National Institute of Mental Health (NIMH) Treatment of Depression Study.[19] Trained raters used videotapes and a measure of patient and therapist behaviors. Outcome was assessed by traditional depression instruments. Patients had been randomly assigned to one of four conditions: brief interpersonal therapy, brief cognitive-behavioral therapy, imipramine plus clinical management, or placebo plus clinical management. The investigators found that the therapeutic alliance was just as important for drug therapy as for psychotherapy. In all four treatment cells, the therapeutic alliance counted for more of the variance of treatment outcome than the treatment method itself! This was the first empirical study to show the importance of the therapeutic alliance in psychotherapy, pharmacotherapy, and placebo outcome.

The Impact of Psychotherapy on the Brain

It may come as a surprise to many that some of the most persuasive evidence that psychotherapy is effective comes from studies of schizophrenia, perhaps the most "biological" of all psychiatric illnesses. In fact, the studies of Hogarty et al found that family therapy reduces relapse in patients with schizophrenia by a factor equal to the impact of antipsychotic medications.[20] Psychotropic drugs tend to reduce relapse by 50% during the first year after an episode of psychotic illness in schizophrenia. If one adds psychoeducational family therapy, the relapse rate is cut in half again. This type of family therapy is specifically based on reducing a construct known as high expressed emotion (EE), which involves excessive criticism and intrusiveness on the part of the family towards the patient. In other words, alterations in relatedness affect the biochemistry of the brain.

In one study of obsessive-compulsive disorder (OCD) Baxter et al looked at local cerebral metabolic rates for glucose using positron emission tomography scan methodology.[21] They found that both behavior therapy and fluoxetine produce similar decreases in cerebral metabolic rates in the head of the right caudate nucleus, suggesting that this form of psychotherapy and fluoxetine have similar physiological effects at the level of the brain.

Like schizophrenia and OCD, panic disorder is often associated with specific alterations in brain mechanisms. Nevertheless, cognitive-behavioral psychotherapy has shown to be effective in treating panic disorder. Panic attacks can be triggered by lactate induction in those with panic disorder. However, a study by Shear et al has demonstrated that lactate induction of panic can be effectively reversed through successful cognitive therapy.[22] These findings suggest that psychological interventions can alter the response of the brain to biochemical factors infused into the system.

Recent provocative research on cancer also suggests that psychotherapy and meaningful supportive relationships can influence brain functioning. Spiegel et al[22] designed a controlled study in which metastatic breast cancer patients were randomly assigned to group psychotherapy or a control condition. Those in group psychotherapy lived an average of 18 months longer than the controls. In a study of malignant melanoma patients, Fawzy et al placed patients in either a support group or a control condition.[23] They found that patients in the support group had more favorable death rates and more lengthy remissions that controls. This effect occurred even though the support group lasted only six weeks.

The Role of Psychodynamic Therapy

Psychodynamic therapy, which focuses on unconscious conflict, meaning, and an understanding of the past as it recapitulates itself in the present, has become less popular in recent years. To a large degree this decline relates to less disorder-specific outcome research compared to cognitive therapy, interpersonal therapy, and behavior therapy. However, psychodynamic therapy continues to have a major role to play. Although it is often denigrated as not having a research base, Luborsky et al recently examined the efficacy of dynamic therapy in studies where it has been compared to other forms of therapy.[24] Their review found that dynamic therapy is in general no better and no worse in its benefits than other therapies. They stressed, however, that the studies they examined were based on brief dynamic therapy. Very few studies involve randomized, controlled designs of extended dynamic therapy or of psychoanalysis. There are formidable methodological problems inherent in these approaches, and such a study would be extraordinarily costly.

Nevertheless, a good deal of research on dynamic therapy has appeared in recent years that supports its efficacy. For example a Norwegian designed an outcome study with panic disorder patients.[26] The subjects were randomized to either clomipramine for nine months or clomipramine plus 15 weekly sessions of dynamic therapy. All the patients in both groups were panic-free within 26 weeks of entering the study.On termination of clomipramine, however, the relapse rate was significantly lower in the clomipramine-plus-psychotherapy group. The investigators concluded that dynamic therapy reduces psychosocial vulnerability associated with panic disorder.

Opiate dependent patients are often regarded as far from ideal candidates for dynamic therapy. Nevertheless, research with such patients suggests that dynamic psychotherapy may have specific advantages for them. In a study by Woody et al methadone maintenance patients were randomly assigned to 24 weeks of counseling plus supplemental drug counseling or to counseling plus dynamic therapy.[17] Eighty-four subjects were evaluated at one-month and six-month follow-up intervals. The patients who received the dynamic therapy had fewer cocaine positive urine samples and required lower doses of methadone. Although there were no significant differences between groups one month after the extra therapy terminated, by six-month follow-up gains made by drug counseling patients had diminished, while gains made by the patients in psychotherapy remained or were still evident. All significant differences favored the psychody-

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namic therapy group.

Another problem that advocates of dynamic therapy have encountered historically is a failure to discriminate clear indications for long-term dynamic therapy. Clearly, such advocates will have no credibility with policymakers if they propose that extended intensive therapy is the treatment for all patients who are not psychotic. Recently, some empirical studies are starting to identify groups for which such treatment is especially suited. Target and Fonagy, for example, looked at outcomes among three matched groups of 127 each at the Anna Freud Centre in London.[28] One group was under six years of age, one group was six to 12 years of age, and one group was 12 to 19 years of age. Outcomes were measured in terms of diagnostic change and adaptation. Children under 12 benefited from psychoanalysis at a frequency of four to five times per week more than psychotherapy at a frequency of one to two times per week. However, for adolescents, more frequent sessions were not beneficial, but duration of treatment was strongly related to outcome.

Some depressed patients require more extended therapy as well. Blatt et al reanalyzed the NIMH Treatment of Depression Collaborate Research data using a factor involving perfectionism.[29] They found that perfectionism had consistently negative relationships with all the outcome measures in all four treatment conditions. On the other hand, long-term psychodynamically oriented therapy appears to be effective with perfectionistic patients.[30] The authors concluded that a substantial period of time is required for highly perfectionistic patients to enter into a therapeutic relationship and change deeply entrenched negative mental representations of self and others.

Another prominent concern among critics of dynamic therapy has been that it is not cost effective. Again, it is incumbent upon psychodynamic clinicians and researchers to demonstrate for which populations extended treatment is cost effective. Since there is a close correlation between suicidality and perfectionism in the subgroup of depressed patients studied by Blatt et al a strong argument can be made that extended therapy with such patients is cost effective by preventing suicide in some cases.[29] An even stronger argument can be made in the case of borderline personality disorder, a common condition in which impulsivity is a major symptom. These patients can be extraordinarily costly to the health-care system by somatizing and contacting numerous specialists for consultations, by showing up in emergency rooms having cut on themselves or taken overdoses, and by using up intensive-care beds. In addition, they are prone to spend a great deal of time in psychiatric hospital units because of suicidality. Studies are showing, however, that these behaviors can be reduced with extended dynamic therapy. For example, Stevenson and Meares looked at the utilization of health-care resources and work functioning in 30 borderline patients for the 12 months prior to receiving treatment.[31] The same patients then received twice-weekly dynamic therapy for 12 months, after which the researchers looked at similar data for the 12 months following the treatment. They demonstrated that time as an inpatient was cut by half after therapy, medical visits were reduced to one-seventh of the pretreatment rate, time away from work was cut by nearly two-thirds, and hospital admissions went from 1.8 per year to 0.7 per year. In the reduced time spent as an inpatient alone, the savings were substantial.

The Stevenson and Meares study demonstrates something that is well known by most psychotherapists—if you can provide regular outpatient therapy to disturbed psychiatric patients, they can deal with their problems in the psychotherapeutic relationship instead of going into the hospital for treatment.[31] An unpublished study by CHAMPUS, the insurer for military dependents, found similar results. By expanding outpatient psychotherapy coverage in 1990, over the next few years they substantially reduced total mental health-care expenditures. In fact, for every one dollar they spent on psychotherapy, they saved four dollars on inpatient treatment.[32]

The final concern that many policymakers share is that the availability of dynamic psychotherapy will result in overutilization. Pharmacotherapy is seen as a much less expensive alternative. Data do not support this notion. In the most carefully designed study of the utilization of psychotherapy, supported by the Rand Corporation, the investigators randomly assigned subscribers to different levels of copayment at six different sites.[33] Even when psychotherapy was provided free, only 4.3% of the covered population used it, and the average number of sessions was 11. The "Woody Allen Syndrome," in which the so-called "worried well" supposedly line up for the opportunity to lie on an analyst's couch for many, many years is largely a mythological construct.

In conclusion, dynamic therapy continues to play a highly significant role in the decade of the brain. Like other psychotherapies, it appears to work by influencing the functioning of the brain and is therefore as much of a "medical" treatment as pharmacotherapy. It also adds a critical dimension of meaning to psychiatric treatment, a dimension of "mind" that the "brain" cannot do without. Research from both neurosciences and psychotherapy are converging on a greater awareness of the mutual dependency between brain and mind, between environment and genetics, and between psychology and biology.

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Alzheimer's Disease: Cognitive and Behavioral Pharmacotherapy

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ABSTRACT—Alzheimer's disease is a progressive degenerative disease with cognitive and behavioral manifestations. The pathophysiology of Alzheimer's disease is increasingly well understood, leading to approved and experimental therapies. Mutations on chromosomes 1, 14, and 21 can cause the disease and are sometimes present in patients with early onset Alzheimer's disease. Older patients—comprising the majority of Alzheimer's disease victims—have a variety of risk factors including age, gender, history of head trauma, low education level, and apolipoprotein genotype. The pathogenetic process leads to regional cell loss and biochemical deficits. The mutations and risk factors lead to increased amyloid production or accumulation and nerve cell death. Neurons atrophy in the cerebral cortex and in source nuclei of important neurotransmitters. The deficiency of acetylcholine can be partially remedied by cholinesterase inhibitors that produce modest cognitive and behavioral improvement. Anti-amyloid agents, antioxidants, anti-inflammatory drugs, estrogens, and calcium channel blockers may all slow the progression of Alzheimer's disease by interfering with specific steps within the disease cascade. Neuropsychiatric symptoms are also common in Alzheimer's disease and may be ameliorated by conventional psychotropic agents. Clinicians can currently offer substantial help to Alzheimer's disease patients, and the future promises more effective pharmacotherapy.

DEMENTIA is defined as a syndrome of acquired deficits in multiple spheres of cognition in the absence of delirium. Alzheimer's disease (AD) is the most important and common dementia. Alzheimer's disease typically presents as a progressive decline in memory, language, visuospatial skills, and other mental abilities in later life. This disorder affects 6% or more of people 65 years or older and nearly half of those 85 or older.[1] The number of patients with AD is expected to increase markedly with the burgeoning size of the elderly population. The number of Americans afflicted with this disorder will continue to increase from the current 4.5 million people to over 20 million by the year 2030. Given these epidemic trends, there is an urgency to understand the pathogenesis of AD and to develop rational pharmacotherapeutic interventions.

In recent years, investigators have made major advances in clarifying the pathophysiology of AD. A cascade of events from molecular and cellular changes to the production of the clinical syndrome characterizes current understanding of the pathogenesis of this disorder. The cascade of events further suggests several mechanism-based therapies that may prevent or delay the onset or slow the progression of AD. Moreover, approved acetylcholinesterase inhibitors and other agents can improve the cognitive symptoms, and psychotropic medications can ameliorate the behavioral disturbances. This review synthesizes information regarding pathogenesis, cognitive symptoms, and behavioral disturbances to provide an overview of the existing and emerging pharmacotherapies of AD.

Identifying Alzheimer's Disease

Alzheimer's disease produces specific cognitive abnormalities.[1,2] The memory disorder of AD features poor

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acquisition and reduced recall of information. Remote memory is less affected than recent recall but is compromised in later stages. Language disturbances begin with word-finding difficulty and progress to poor naming and impaired comprehension. Repetition of spoken language is retained until late in the disease. Visuospatial difficulties include disturbed constructions and environmental disorientation. Executive problems manifest as impaired planning, disturbed goal-oriented behavior, and poor judgment. These cognitive deficits result in progressive impairment in activities of daily living such as the ability to shop, pay bills, and perform household tasks.

In addition to cognitive problems, AD produces specific behavioral disturbances. For example, in a study of 50 AD patients during a one-month period, 72% had apathy, 60% agitation, 48% anxiety, 42% irritability, 38% depressive symptoms, 38% excessive motor activities, 36% disinhibition, 22% delusions, 10% hallucinations, and 8% euphoria.[3] Sleep disturbances, reduced or altered sexual activity, and appetite changes also occur, and most AD patients eventually lose a significant amount of weight.

Motor functions of AD patients remain normal throughout most of the course of the illness. Pacing and wandering are common in the middle phases of the disease, and in the late phase, patients lose the ability to ambulate, are incontinent, and have dysphagia.

Although there is no definitive diagnostic test for AD, there are clinical criteria for this disorder. The National Institute of Neurological and Communicative Diseases and Stroke-Alzheimer's Disease and Related Disorders Association (NINCDS-ADRDA) criteria for clinically probable AD include the presence of dementia (documented by mental status testing, mental status scales, or neuropsychological tests), the presence of deficits in two or more areas of cognition, the absence of delirium, a progressive course, and the exclusion of other causes of dementia.[4] The alternative *Diagnostic and Statistical Manual of Mental Disorders*, 4th Edition (DSM-IV) criteria require the presence of memory loss plus aphasia, agnosia, apraxia, or executive dysfunction (American Psychiatric Association, 1994). In DSM-IV, the diagnosis of AD is further supported by cognitive impairments that are severe enough to interfere with social and other daily functions. When patients meet either of these sets of criteria for AD, the autopsy-confirmed accuracy for the diagnosis of AD reaches 85% or more.[5]

Diagnostic tests can strengthen the clinical diagnosis of AD. Besides the identification of the typical clinical syndrome, the diagnosis of AD depends on the exclusion of other causes of the dementia through laboratory tests (blood count, serum chemistries, thyroid function tests, liver function tests, B_{12} level, syphilis serology), neuroimaging, and other tests when indicated.[4] Structural imaging studies such as computerized tomography and magnetic resonance imaging are normal or demonstrate nonspecific cerebral atrophy in AD; however, functional imaging such as positron emission tomography and single photon emission computed tomography may show corroborative evidence of reduced cerebral metabolism or perfusion in parietal and temporal lobes.[6] Apolipoproteins (Apo) are cholesterol-bearing proteins that appear to play an important role in the neuropathology of AD. The ApoE-4 allele has a marked association with AD,[7,8] and ApoE-4 genotype determination may help assess the likelihood that a dementia patient has AD.

Clinical examination and diagnostic tests are necessary in order to distinguish AD from other dementing illnesses. The differential diagnosis of AD includes vascular dementia, frontotemporal dementias including Pick's disease, the dementia of Parkinson's disease and "Parkinson plus" syndromes, the dementia of depression, the AIDS dementia-complex, Creutzfeldt-Jakob disease, hydrocephalus, metabolic disorders (eg, hypothyroidism, vitamin B_{12} deficiency, and other systemic illnesses), alcohol and other toxic encephalopathies, and miscellaneous dementias produced by tumors, trauma, inborn errors of metabolism, and other disorders.[1]

Pathogenesis of Alzheimer's Disease

The pathogenesis of AD is the process leading from genetic and molecular changes to neuritic plaques, neurofibrillary tangles, and neuronal death. The postulated sequence of events comprising the pathogenesis of AD may be characterized as a cascade of sequential steps (Fig. 1).

The majority of AD patients have late-onset sporadic AD. Risk factors for these patients include advanced age, female gender (partly due to greater longevity than males), ApoE-4 genotype, history of head trauma, and low intellectual capacity and educational level. Among individuals with no family history of AD, the lifetime risk of AD rises from 9% in those without the ApoE-4 allele to 29% among those with at least one copy of the allele.[9] Among individuals with a first-degree relative with AD, the lifetime risk of AD rises from 20% of those without an ApoE-4 allele to 47% of those with one e-4 allele and 91% of those with two e-4 alleles.[7] Several investigators report a greater incidence of prior significant head trauma among AD patients compared to normal controls.[10] The presence of low intellectual capacity and low educational level also correlate with the risk for AD.[11,12] Risk factors exert their influence through one of two mechanisms: they increase aggregation of amyloid protein in the brain (this is the mechanism proposed for ApoE-4 and may occur with head trauma) or they adversely affect neuronal function, making them more likely to be rendered abnormal when AD is present in the brain (low education, history of head trauma, estrogen deprivation).[13]

Although most AD patients lack a direct inheritance, five to 10% of patients have familial AD (FAD). They inherit their disease as an autosomal dominant disorder that can be attributed to an inherited mutation on chromosomes 21, 14 (presenilin 1), or 1 (presenilin 2).[14,15] Investigators have characterized several mutations of the chromosome 21 gene for amyloid precursor protein (APP), the large transmembrane protein that is the source of amyloid in AD.[16] In addition, Down's syndrome with three copies of chromosome 21 is associated with AD neuropathology when these patients reach their 30s or 40s.[17] The majority of FAD patients with a genetic cause, however, have a chromosome 14 mutation, and all known mutations lead to increased production or aggregation of amyloid in the brain.

The aggregation of amyloid ß-protein (Aß) is a central feature of most theories of the pathogenesis of AD. When aggregated in a ß-pleated configuration, amyloid is toxic to neurons and induces apoptotic cell death. Normally, APP is catabolized primarily through an α-secretase pathway and there is little production of Aß. In some forms of AD, APP is catabolized more actively through ß-secretase and γ-secretase pathways in endosomal-lysosomal pathways, resulting in the over-production and eventual aggregation of Aß.[18] ApoE-4 is present in neuritic plaques and appears to bind amyloid facilitating its aggregation into ß-pleated sheets.[19]

The hallmark neuropathologic markers of AD are neuritic plaques and neurofibrillary tangles. Neuritic plaques begin in diffuse plaques with unaggregated amyloid; as they mature, the amyloid assumes the ß-pleated configuration and forms the core of the plaque. Around this central amyloid core are degenerating dendrites and axons, some of which contain paired helical filaments like those found in neurofibrillary tangles. Regenerative neuronal sprouts and ApoE-4 are also present within plaques, and there are inflammatory changes, including the presence of alpha-1-antichymotrypsin, protein kinase C, complement, reactive astrocytes, and microglial cells.[20] The presence of the inflammatory changes coincides with the maturation of the plaque to the neuritic form.

Neurofibrillary tangles consist of paired helical filaments containing the microtubule-associated protein tau in an abnormally phosphorylated state.[21] Neurons with high concentrations of tau protein are particularly likely to form tangles.[22] Changes in calcium homeostasis associated with amyloid toxicity may contribute to the formation of neurofibrillary tangles.[19]

The mechanism by which Aß induces neuronal death is unclear. Changes in synaptic density may result from the extracellular deposition of Aß. Loss of synapses is the first event to occur in the course of cell death,[23] and synaptic density has the strongest correlation with the cognitive impairment of AD.[24] Another mechanism of neuronal

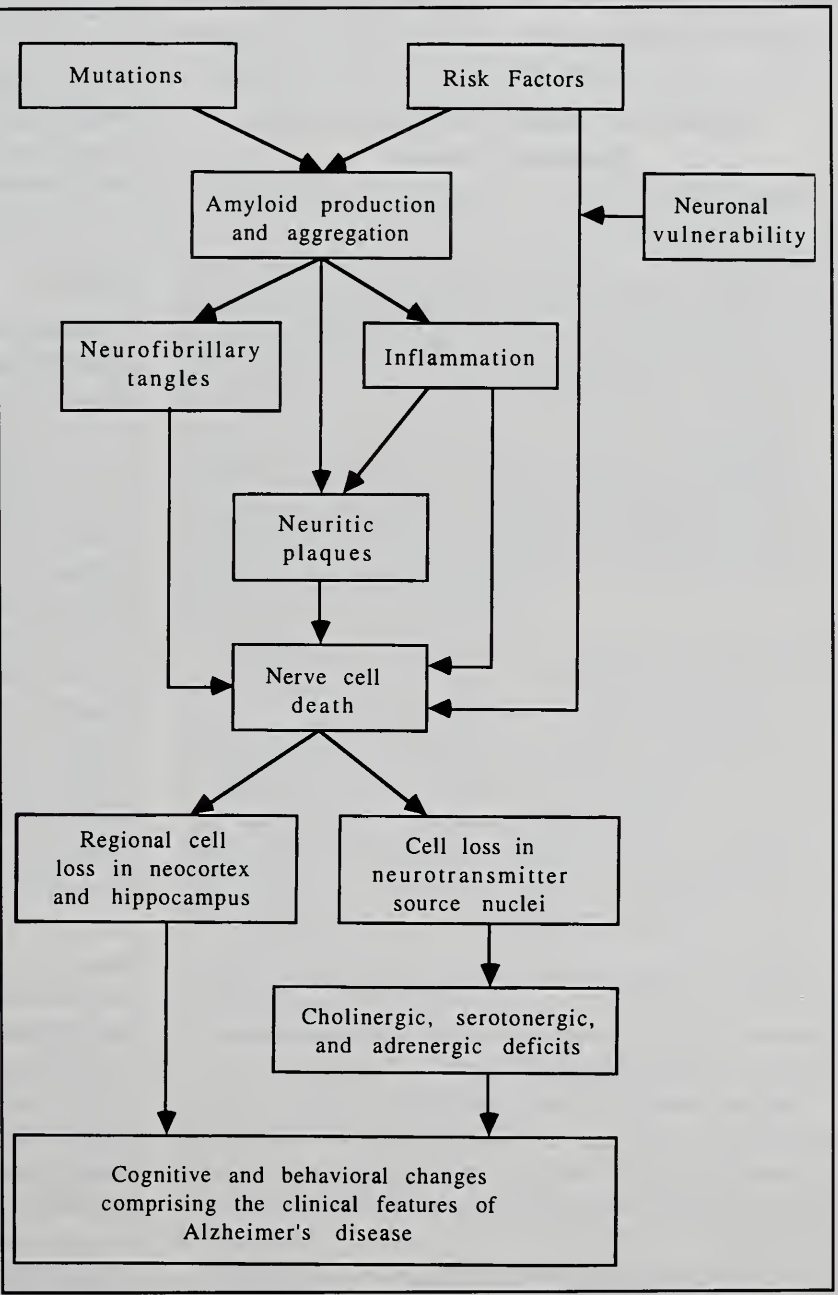
Mutations
Risk Factors
Amyloid production and aggregation
Neuronal vulnerability
Neurofibrillary tangles
Inflammation
Neuritic plaques
Nerve cell death
Regional cell loss in neocortex and hippocampus
Cell loss in neurotransmitter source nuclei
Cholinergic, serotonergic, and adrenergic deficits
Cognitive and behavioral changes comprising the clinical features of Alzheimer's disease

Figure 1.—Pathogenesis of Alzheimer's disease: Postulated Cascade of Events

injury is the Aß-mediated increase of intracellular calcium. This calcium damages cells by increasing oxidative injury and activating destructive enzymes.[19] As noted, high intracellular calcium also leads to the formation of neurofibrillary tangles, and loss of calcium homeostasis may be the common factor promoting development of both plaque-related cell death and neurofibrillary tangles.[19]

Neuronal death in AD exhibits regional specificity. Neuronal loss in the hippocampi produces memory loss. Cell loss in the temporoparietal regions of the left hemisphere causes aphasia, whereas cell loss in the temporoparietal cortex of the right hemisphere is associated with visuospatial deficits. Neuronal death in the frontal lobes in AD results in abnormalities of abstraction, judgment, and problem solving. Neuronal death in the nucleus basalis in the basal forebrain leads to a deficiency of acetylcholine, in the raphe nuclei to deficits in serotonin, and in the locus ceruleus to reduced levels of cerebral norepinephrine.

Pharmacotherapeutic Modification of the Pathogenic Cascade

Pharmacologic agents can intervene in the pathogenic cascade that leads to cell death. These agents may prevent or delay the onset of AD in patients at risk for the illness or may slow the progress of the dementia. They do not reverse the process or improve the symptoms. Most of these agents are experimental or not yet available for clinical use.

There are currently no interventions available to block the formation or aggregation of amyloid in the brain. Experimental agents that reduce the production of Aß (eg, secretase inhibitors) or increase the clearance of amyloid (eg, drugs that interfere with the aggregating properties of ApoE-4) may slow the progress of AD. Phorbol esters decrease Aβ production *in vitro* and activation of muscarinic cholinergic receptors diminishes Aβ in *vivo*.[18] Protease inhibitors such as β- and γ-secretase inhibitors could eventually have a role in the prevention or modification of AD. The development and use of ApoE-4 blockers or modifiers would decrease amyloid aggregation and neuritic plaque formation. ApoE-3 has a putative protective effect by inhibiting tau phosphorylation, and agents that facilitate this effect could prevent the occurrence of neurofibrillary tangles. Risk factors subject to reduction include head trauma through the use of seat belts and the adverse effects of low education through the promotion of higher educational achievement.

Neural protective agents that reduce the likelihood of cell death are available and some have been shown to be of benefit in AD. Vitamin E and selegiline have been tested in prospective clinical trials and have shown to slow the progress of AD.[25]

Estrogens promote synaptic density and have other neuroprotective effects and retrospective studies suggest estrogen replacement therapy in postmenopausal women may delay the onset of AD or moderate its severity.[26]

Epidemiological studies or small scale drug trials suggest that nonsteroidal anti-inflammatory agents such as ibuprophen and indomethacin may be beneficial in preventing or treating AD.[27] The inflammatory processes associated with neuritic plaques may accelerate cell loss and anti-inflammatory agents may combat this dimension of the pathogenesis of AD.

Several other hypothetical pharmacotherapeutic strategies decrease neuronal injury in AD. A commonly proposed mechanism of neuronal injury is excitatory amino acid (EAA) toxicity. The EAA receptor, N-methyl-D-aspartate (NMDA), controls membrane calcium channels and allows calcium to enter the cells.[28] NMDA receptor blockers or antagonists of the glycine co-agonist receptor site might interfere with this EAA-mediated neuronal damage. NMDA receptor antagonists include dextromethorphan, memantine (a congener of amantadine), and nitrogylcerine; felbamate is a competitive antagonist at the glycine binding site. Similarly, calcium channel blockade with agents such as flunarazine and nimodipine can stabilize intracellular calcium and exert neuroprotective effects.[29]

Further therapeutic avenues for AD are drugs that reduce oxidative injury. Superoxide anions, hydroxy radicals, and hydrogen peroxide are products of metabolic processes that use molecular oxygen. These free radicals attack proteins, injure genetic material and deoxynucleic acid, and disrupt lipid membranes.[30,28] Iron exacerbates oxidative stresses and facilitates lipid peroxidation, and the use of iron chelators such as desferrioxamine can remove excess brain iron in AD. Vitamin E and selegiline may exert their therapeutic effects through this mechanism and other antioxidants may have superior or additive benefit.[25]

Nerve growth factor (NGF) is intimately related to the maintenance of function of the cholinergic basal forebrain system. Forebrain cholinergic neurons are the only cells in the adult brain that contain NGF receptors, and NGF increases hippocampal acetylcholine and prevents cholinergic cell loss and atrophy after fornix lesions.[31] These data provide the basis for the potential utility of NGF as neuroprotective therapy for basal forebrain cells in AD. A major problem with the use of NGF, however, is difficulty in delivering this agent into the central nervous system. Surgical implantation of basal forebrain cells from other species or neurons from immortalized cell lines using neurotransplantation techniques is a potential therapeutic alternative.

In the future, genetic engineering may be the most effective therapy for altering the expression of AD. Genetic therapy could become available for those at risk for

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Table 1.—Potential Treatments for the Cognitive Symptoms of AD

Underlying disorder	Treatment category	Therapeutic agents
Cholinergic cell loss	Cholinesterase inhibitors	Donepezil
		Tacrine
		Physostigmine
		Metrifonate
		ENA-713
		Galantamine
	Cholinergic agonists	Arecholine
		Bethanechol
		Xanomeline
	Cholinergic precursors	Lecithin
		Choline
	Associated drugs	Acetyl-l-carnitine
		Ondansetron
		Thiamine
Cell dysmetabolism	Nootropics	Piracetam
		Hydergine

FAD from mutations on chromosomes 1, 14, or 21. Moreover, genetic engineering techniques could mitigate the expression of the ApoE gene or the gene that codes for APP. This avenue of research holds great promise for the future prevention of AD.

Treating the Cognitive Symptoms

The main pharmacotherapy of the cognitive symptoms of AD involves cholinomimetic drugs (Table 1). Cholinergic deficiency contributes to the memory disturbance of AD.[32] The nucleus basalis manufactures choline acetyltransferase (CAT) that is transferred to the synaptic ending where it synthesizes acetylcholine for release into the synapse. Loss of cells in the nucleus basalis of Meynert in the basal forebrain in AD produces a reduction in CAT and a subsequent deficiency in acetylcholine.[33] Cholinergic activity is reduced 80% to 90% in affected cortical regions yet postsynaptic muscarinic (M_1) receptors are largely preserved.[34]

Cholinomimetic approaches in AD have involved multiple strategies. Clinicians and investigators have attempted to increase acetylcholine production with cholinergic precursors (choline and lecithin), prevent intrasynaptic acetylcholine destruction with acetylcholinesterase inhibitors (donepezil, tacrine, physostigmine, ENA-713, and galantamine), and directly stimulate postsynaptic muscarinic receptors with receptor agonists (arecholine and xanomeline).[35] Thiamine and acetyl-l-carnitine may also improve memory in AD through cholinomimetic mechanisms. Of these drugs, the acetylcholinesterase inhibitors donepezil and tacrine have demonstrated a definite but modest beneficial effect on cognition and have been approved by the Food and Drug Administration for the treatment of AD.[36,37] Donepezil has the fewest side-effects and is the most feasible to use as first-line therapy in AD patients. Unlike physostigmine, it can be administered orally and, unlike tacrine, it does not cause hepatotoxicity. Clinicians initiate donepezil therapy starting with a single 5 mg daily dose and, if tolerated by the patient, increase the dose to 10 mg after six weeks.

A variety of other drugs may improve the cognitive symptoms of AD. Nootropics are drugs that putatively improve cognitive function and are without side effects. Piracetam, the prototypical nootropic agent, may have GABAergic properties but has not had clearly demonstrable neuropsychological effects. Finally, in a large meta-analysis, hydergine (a combination drug with ergoloid mesylates) was found to have modest efficacy over placebo when given in doses of 4 mg or more.[38]

Treating Behavioral Changes in Alzheimer's Disease

Significant behavioral disturbances of AD include delusions, agitation and aggression, depression, anxiety, apathy and indifference, and disturbed psychomotor activity.[3,39,40] The neuropsychiatric disturbances of AD are among the most disabling consequences of this disorder, the most troublesome for caregivers, and a major reason for the institutionalization of AD patients.

There have been few double-blind controlled studies of psychotropic medications in AD, and they may be less

Table 2. Treatment of Neuropsychiatric Disorders Observed in Alzheimer's Disease

Class	Agents	Usual Daily Dose (P.O.;Range)
Delusions	Haloperidol (Haldol)	1 mg (0.5–3 mg)
	Fluphenazine (Prolixin)	1 mg (1–5 mg)
	Thiothixene (Navane)	2 mg (1–10 mg)
	Thioridazine (Mellaril)	75 mg (30–150 mg)
	Molindone (Moban)	15 mg (5–40 mg)
	Clozapine (Clozaril)	50 mg (12.5–100 mg)
	Risperidone (Risperdal)	1 mg (0.5–6 mg)
	Olanzapine (Zyprexa)	5 mg (5–20 mg)
Agitation/aggression	Haloperidol (Haldol)	1 mg (0.5–3 mg)
	Fluphenazine (Prolixin)	1 mg (1–5 mg)
	Thiothixene (Navane)	2 mg (1–10 mg)
	Thioridazine (Mellaril)	25 mg (10–75 mg)
	Molindone (Moban)	75 mg (5–125 mg)
	Risperidone (Risperdal)	1 mg (0.5–6 mg)
	Trazodone (Desyrel)	100 mg (100–400 mg)
	Buspirone (Buspar)	15 mg (15 mg–30 mg)
	Carbamazepine (Tegretal)	400 mg (200–1200 mg)
	Divalproex (Depakote)	425 mg (250–3000 mg)
	Propranolol (Inderal)	120 mg (80–240 mg)
	Lithium (Eskalith)	900 mg (300–1200 mg)
	Lorazepam (Ativan)	1 mg (0.5–6 mg)
Depression	Nortriptyline (Pamelor)	50 mg (50–100 mg)
	Desipramine (Norpramine)	50 mg (50–150 mg)
	Doxepin (Sinequan)	50 mg (50–150)
	Trazodone (Desyrel)	100 mg (100–400 mg)
	Fluoxetine (Prozac)	40 mg (20–80 mg)
	Sertraline (Zoloft)	50 mg (50–200 mg)
	Paroxetine (Paxil)	20 mg (10–50 mg)
	Venlafaxin (Effexor)	100 mg (50–300 mg)
	Nefazodone (Serzone)	400 mg (200–600 mg)
Anxiety	Oxazepam (Serax)	30 mg (20–60 mg)
	Lorazepam (Ativan)	1 mg (0.5–6 mg)
	Buspirone (Buspar)	30 mg (15–45 mg)
	Propranolol (Inderal)	120 mg (80–240 mg)

effective in the altered cerebral milieu of AD than in idiopathic psychiatric illnesses. Nevertheless, psychoactive medications may be useful in the management of many of these behavioral symptoms (Table 2). Moreover, recent studies with acetylcholinesterase inhibitors indicate that they may ameliorate the behavioral disturbances as well as the cognitive symptoms of AD.[41]

Psychoactive drug administration in AD patients requires expertise (Table 3). Psychoactive agents must be used for appropriate reasons and for correct target symptoms. The clinician must have a working knowledge of the effects and pharmacodynamics of the agent of choice and must carefully monitor the patient for potential side-effects. It is important to use the smallest dose possible, often a fraction of that required in younger adults, with small dosage increments. The most effective treatment may consist of creative combinations of supportive counseling, environmental manipulations, and psychoactive drugs.

Delusions are common in AD. Studies report delusions among 20% to 40% of AD patients.[42] The delusions of AD usually involve beliefs involving theft of their property (48%), their house is not their home (21%), familiar persons are not who they claim to be (Capgras syndrome) (9% to 17%), strangers are living in their house (phantom boarder), their caregivers are unfaithful or will abandon

Table 3.—Guidelines for Pharmacotherapy In Dementia

Before prescribing

1. Establish the most accurate possible diagnosis of Alzheimer's disease as well as any concurrent illnesses.
2. Minimize use of medications and seek nonpharmacologic alternatives.
3. Take careful medication history including over-the-counter drugs and prior drug responses.
4. Do not avoid pharmacotherapy just because of the age of the patient or the presence of Alzheimer's disease.

When prescribing

5. Choose specific target symptoms for treatment and carefully monitor the response to therapy.
6. Provide easily understood verbal and written instructions to both patients and caregivers.
7. Introduce pharmacotherapy at one-third to one-half the dose recommended for young adults.
8. Increase the drug dosage in small increments.
9. Use higher doses if the patient fails to respond to lower doses and does not have side-effects.
10. Know the pharmacology, side-effect profile and potential drug interactions of each agent.
11. Avoid multiple drug regimens whenever possible and of beware potential additive toxicity.
12. Initiate treatment with vitamin E (2000 IU daily) if appropriate to slow the progress of the illness.
13. Consider treatment with a cholinesterase inhibitor (begin with donepezil 5 mg per day and increase to 10 mg per day after one month if tolerated; consider tacrine therapy for patients intolerant of donepezil).
14. Refer female Alzheimer's disease patients not receiving estrogen replacement therapy to their primary care practitioner for consideration of estrogen therapy.
15. Implement treatment with a psychotropic for residual behavioral symptoms, if any, remaining after cholinesterase therapy has been optimized.

After prescribing

12. Evaluate adherence to treatment instructions.
13. Accept partial responses if more complete responses result in unacceptable side-effects.
14. Review drug regimens frequently, discontinue unnecessary drugs, simplify dose schedules.
15. Obtain serum drug levels where they may help guide dosage decisions.
16. Monitor side-effects regularly.

them, or the persons in photographs or on television are actually present in their homes (picture sign).[39,44,43] Delusions are more common in the middle stages of the illness (63%) than in the first stage (30%) or the third stage (52%) and tend to occur with greater cognitive deficits; they herald a more rapid cognitive decline.[44,45] AD patients with delusions and other psychotic features have significantly more plaques and tangles in the medial temporal-prosubicular area and the middle frontal cortex, significantly higher levels of norepinephrine in the substantia nigra, and significantly lower levels of serotonin in the prosubiculum than AD patients without delusions.[46] Delusions in AD may result from the deficiency of acetylcholine in conjunction with preserved noradrenergic function.

Delusions among AD patients respond to antipsychotic agents to at least a limited extent.[47,48] No specific antipsychotic agent is superior to another in ameliorating delusions in AD.[49] The main determinant of antipsychotic drug choice is the side-effects profile of the medications. Parkinsonism and tardive dyskinesia commonly accompany the use of antipsychotic medications in AD patients. Extrapyramidal side-effects usually respond to a reduction of dosage or to the administration of low doses of amantadine hydrochloride; anticholinergic agents may increase confusion and should be avoided. Atypical antipsychotic agents have fewer extrapyramidal effects than conventional agents. These drugs have complex receptor activity profiles and achieve their antipsychotic effects through non-D2 receptors, whereas conventional antipsychotic agents appear to be active primarily at the D2 dopamine receptor.[50] Because of their lower level of D2 occupancy, novel antipsychotics such as risperidone and olanzapine may be preferable in patients with AD.

Agitation is extremely common among AD patients, and aggression or assaultiveness occur in up to 70% of these patients.[40,51] Agitation and aggression may occur independently of other major neuropsychiatric disorders and may not correlate with severity of dementia. Caregivers often do not tolerate these behaviors and resort to physical restraint of the patients. Furthermore, some AD patients manifest catastrophic reactions (sudden episodes of agitation and distress out of proportion to provocation), angry outbursts, and violent behaviors.

The first step in reducing agitation and aggression is to determine if there are provocative circumstances in the environment that can be eliminated or modified. Pharmacologic agents are indicated if environmental changes are insufficient to alleviate the agitated behavior. Agitation associated with delusions responds best to low-dose antipsychotic medications whereas general agitation responds best to agents such as trazodone.[52] Patients who are unresponsive to trazodone or an antipsychotic agent may improve with buspirone, valproate, or carbamazepine. Benzodiazepines are useful for agitation in some individuals but have the disadvantages of sedation, dependence, and occasional disinhibition.

Although few AD patients have major depressive episodes, less severe depressive symptoms are frequent, occurring in 20% to 40% of AD patients.[53,42,54] Tearfulness and feelings of hopelessness and worthlessness are common, but suicide is rare in AD. Selective serotonin-receptor inhibitors are among the safest antidepressant medications in the elderly. Dysfunction of ascending noradrenergic and serotonergic systems may mediate depression in AD since both the locus ceruleus and the raphe nuclei are involved in this disorder.[55] In addition, AD patients have structural involvement of the limbic system and the convexity of the frontal lobes, areas implicated in the production of depressive symptomatology.[56]

Anxiety occurs in approximately 40% of patients with AD. The most common manifestation is fear of being away from the caregiver and excessive anticipatory concern regarding upcoming events.[42] In treating anxious AD patients, buspirone may produce fewer adverse cognitive side-effects than the benzodiazepines. Table 3 presents agents used in the management of anxiety in AD.

Most patients with AD develop apathy, indifference, and other personality changes, particularly as the disease progresses. These personality changes result from direct involvement of frontal convexity regions and from a functional disconnection of the limbic system from these frontal regions. Apathy and indifference have not been a traditional target of drug therapy, but recent studies suggest that apathy in AD may improve with cholinergic enhancement therapies.[41] Psychostimulant medications are rarely used in the elderly and are potentially dangerous.

Many patients with AD exhibit motor restlessness, wandering, pacing, and carphologia or purposeless finger movements. Motor restlessness occurs in 21% to 60% of AD patients[40,43,57] and wandering in 10% to 61%.[43,57] These behaviors produce substantial hardships for caregivers. Wandering and pacing are pervasive behaviors in the middle and later stages of the illness when patients are often institutionalized and providing safe contained spaces for wandering patients is a major challenge for residential facilities. Pharmacotherapy is generally not recommended for these motor behaviors unless the symptoms are very severe and debilitating. Moreover, antipsychotic drug-induced akathisia may resemble the spontaneous restlessness in the AD patient, and drug discontinuation may be necessary to differentiate the two conditions.

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Conclusions

The recent elucidation of a pathogenic cascade in AD suggests a range of rational pharmacologic interventions for this disorder. These advances represent a revolutionary advance in the treatment of degenerative disorders and have changed AD from an inevitably fatal illness to one where there is real hope for prevention and treatment. The sequential steps of the amyloid-cascade provide opportunities to defer the onset or slow the progression of AD. Loss of cells in neurotransmitter source nuclei, especially the cholinergic system, correlate with many of the cognitive and behavioral symptoms of AD. Consequently, cholinergic agents, as well as specific psychotropic agents, are useful in treating the symptoms of AD. Future pharmacotherapeutic strategies will involve combination therapy with agents to slow progress (intervening at multiple steps in the cascade), treat the cholinergic-related symptoms (cholinergic therapies), and reduce the behavioral disturbances (psychotropics).

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Physician Compliance with Practice Guidelines

JOHN W. GOETHE, M.D., HAROLD I. SCHWARTZ, M.D.,
AND BONNIE L. SZAREK, R.N.

ABSTRACT—*Background:* Physician adherence to established practice standards has become an important national issue. Despite the proliferation of formal standards of practice, there is little evidence that the mere availability of guidelines results in changes in physician practices. This paper presents the results of a study of the effectiveness of a computerized monitoring and notification system in increasing physician compliance with treatment guidelines.

***Methods:* This study prospectively compared medical staff practices in two one-year periods utilizing a computer system which tabulated noncompliance and provided reminders.**

***Results:* Overall, there was a statistically-significant decrease in the number of alerts issued in year two compared to year one; alerts were issued on 15% *vs* 29% of all patients (*P*<.001). The average number of alerts per patient decreased to .20 from .41.**

***Conclusions:* The study results indicate that a clinical decision support system such as that described can improve adherence to treatment guidelines.**

Introduction

AMONG the changes in American medicine accompanying health-care reform is the increased emphasis on practice guidelines. Advocates of formal standards of care see them as a means of achieving their goal of optimal outcomes at minimum cost by influencing the behavior of clinicians, changing attitudes, and enhancing knowledge.[1] To this end, guidelines have been developed by government agencies and professional organizations, health-maintenance groups, regulatory and certifying agencies such as the National Council for Quality Assurance (NCQA), individual hospitals, and third party payors.[2–6] A notable example at the federal level is the Agency for Healthcare Policy and Research (AHCPR).[7] In a survey of professional organizations Kelly and Swartwout noted that by 1990, 26 physician specialties had developed practice parameters, and at that time another 10 were in the process of creating guidelines.[8] The American Psychiatric Association, the largest organization for this specialty, began publishing practice guidelines in 1993, citing its concern about the rush to create standards, the use of guidelines to determine "appropriate" or "reimbursable" care, and the failure to secure "systematic scientific and clinical input."[9]

Clinical research findings also point to the importance of treatment standards, and some studies have shown that noncompliance with recommended guidelines leads to suboptimal patient outcomes. For example, despite the availability of effective treatments for depression and widely distributed guidelines for their use, a substantial proportion of depressed patients do not receive "adequate" therapy.[10-11] These findings point to the disparity between medical knowledge and actual clinical practices, a problem that has been noted in general medicine as well as in

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psychiatry.[12-14] This disparity is among the factors contributing to attempts to decrease variances in clinical practices, through guidelines as well as other means.

How (and if) practice guidelines actually influence care and affect outcomes is a central question. The anticipated benefits are based on the assumption that formal standards, in and of themselves, will result in physician adherence to these "best practices." However, a number of studies have demonstrated that the mere distribution of guidelines, without additional incentives or efforts to assure compliance, has little effect on practice.[15,16] This conclusion is also supported by the literature on information dissemination and by social influence theory.[17,18] As noted by Kanouse and Jacoby, "Unless a treatment recommendation prescribes *defined* actions to be taken in *defined* circumstances for *specific* patients, it is unlikely to have a uniform or measurable effect on practice."[17] Even when physicians report agreement with published standards and, surprisingly, even when they believe that their behavior has been changed by them, there is little objective evidence that significant change in treatment practices actually occurs.[19] By contrast, there is evidence that clinical organizations can create inducements that enhance compliance, though such efforts generally require a commitment of resources.[20]

In a recent review, Elson and Connelly discussed the factors conducive to change in physician behaviors, and they include "accessibility to relevant guidelines at the time and point of care, reminder and alert systems, ease of access to patient information, and ease of executing orders or plans." [21] Indeed, there is growing evidence that when guidelines are accompanied by feedback to the clinician (often through computer-driven alert systems) practice behavior is more effectively changed.[1] (Computerized systems may compel a response when they give rapid feedback directly to the physician or are integrated with electronic order entry and other components of the medical record.) In one report physicians discontinued nephrotoxic medications significantly earlier when they received alerts about elevated creatinine levels than they did without feedback.[22]

Despite encouraging advances there have been few hospital-wide implementations of patient-specific, "real time" feedback systems. Studies of large-scale applications of monitoring and feedback systems are of interest since this technology may contribute to improved patient care and support quality improvement and cost-containment initiatives. This paper presents the results of a study of the effectiveness of a computerized alert system now in routine use at the Institute of Living,. Specific questions addressed were: 1) Do clinicians respond to feedback about "nonstandard" practices? 2) Does a clinical monitoring system that provides patient-specific feedback result in increased adherence to treatment guidelines?

Methods

The Institute of Living is a 130-bed psychiatric hospital which functions as Hartford Hospital's Mental Health Network. The guidelines described are a subset of a pharmacotherapy manual created and approved by this institution. Selected for study were nine specific treatment standards covering two major disorders, together accounting for more than 50% of admissions, and seven prescribed medications. (See Tables 1 and 2.) The guidelines are incorporated into a computerized treatment monitoring system developed and implemented at this facility.[23-25] To address the research questions the authors prospectively designed a comparison of the evaluation and prescribing practices of the medical staff in two one-year periods (FY 94 *vs* FY 96), expecting increased compliance with the treatment guidelines in year two. When a guideline was not followed the clinician was notified (an "alert") and instructed to comply with the treatment standard or to provide a rationale for the alternative practice. (For each guideline a list of common reasons for deviating from the standard accompanied the notification, allowing clinicians to respond by a simple "check" in most cases.) All instances of "nonstandard" practice were tabulated along with the frequency and type of response to the alert (eg, a change in treatment or diagnosis following receipt of the notification). For each alert, total number of occurrences was calculated; the χ^2 statistic was used to compare the results from the two years.

The investigators monitored the care of all inpatients treated during the study period by reviewing the alerts before the daily notifications were transmitted to the treating physician. There were 2,458 patients hospitalized in year one and 3,619 in year two. Demographic and diagnostic data for the two samples are displayed in Table 3. In year one there were 29 different physicians on the inpatient services, 11 of whom had limited direct patient contact. In year two there were 19 individual physicians, four of whom carried very few patients. Twelve of these 29 physicians were on staff during both years, and they accounted for 84% of the alerts in the first year and 74.6% in the second.

Results

Overall, there was a statistically-significant decrease in the number of alerts issued in year two compared to year one. In year two alerts were issued on only 15% of patients treated compared to 29% in the first year (χ^2 = 167.01, df=1, P<.001). The average number of alerts per patient was .20 in year two and .41 in year one. Table 4 shows for

Table 1.—Practice Guidelines

1. Patients with a diagnosis of schizophrenia receive antipsychotic medications
2. Patients with a diagnosis of major depression receive antidepressant medication
3. Antipsychotic medication is indicated only for patients with a diagnosis of a psychotic disorder (see Table 2a)
4. The following medications are indicated only for the diagnoses specified (see Table 2a)
5. Patients with a substance abuse diagnosis do not receive benzodiazepines for > one week
6. Antipsychotic medication is not prescribed concurrently for > one week
7. Specified baseline laboratory assessments must be obtained per protocol for the following medications (see Table 2b)
8. Specified follow-up laboratory assessments must be obtained per protocol for the following medications (see Table 2b)
9. Serum levels must be obtained per protocol for carbamazepine, valproic acid, and lithium

Table 2a.—Practice Guidelines

Medication	**Indications**
Antipsychotics	major depression with psychotic features, bipolar disorder, schizophrenia, schizoaffective disorder, psychotic disorder nos, brief reactive psychosis, delusional disorder, schizophreniform disorder
Bromocriptine	amenorrhea, galactorrhea, infertility, Parkinson's disease, major affective disorder, schizoaffective disorder or schizophrenia
Carbamazepine	epilepsy, trigeminal neuralgia, major affective disorder, schizophrenia, bulimia, intermittent explosive disorder, obsessive compulsive disorder, post-traumatic stress disorder, conduct disorder, oppositional defiant disorder, attention deficit/hyperactivity disorder, alcohol withdrawal delirium, Tourette's syndrome
Clonidine	hypertension, opioid abuse/dependence, schizophrenia, anxiety disorder, major affective disorder, obsessive compulsive disorder, post-traumatic stress disorder, intermittent explosive disorder, conduct disorder, oppositional defiant disorder, attention deficit/hyperactivity disorder, Tourette's syndrome, Korsakoff's psychosis, tardive dyskinesia, akathisia
Lithium	bipolar disorder, major depression, schizoaffective disorder, schizophrenia, intermittent explosive disorder, conduct disorder, oppositional defiant disorder, attention deficit/hyperactivity disorder
Beta Blockers	hypertension, schizophrenia, anxiety disorder, post-traumatic stress disorder, intermittent explosive disorder, tardive dyskinesia, tremor, akathisia, migraine
Valproic Acid	epilepsy, major affective disorder, schizophrenia, intermittent explosive disorder, conduct disorder, oppositional defiant disorder, attention deficit/hyperactivity disorder, panic disorder

Table 2b.—Practice Guidelines

Medication	**Laboratory Tests**
Carbamazepine	*Baseline:* Complete blood cell count (CBC), platelet count, liver function tests,* serum creatinine, iron, electrolytes, urinalysis *Follow-up:* CBC, platelet count, liver function tests at least every two weeks for the first month, then every six months
Lithium	*Baseline:* CBC, serum creatinine, electrolytes, T_3 uptake, T_4, TSH, urinalysis *Follow-up:* serum creatinine, TSH at least every six months
Valproic Acid	*Baseline:* CBC, platelet count, liver function tests, total protein *Follow-up:* CBC, liver function tests every month for six months, then every three months times two, then every six months

*ALT, AST, bilirubin, alkaline phosphatase

Table 3.—Patient Characteristics

Time Period	Year 1	Year 2
Total hospitalized (n)	2,458	3,619
Gender (n % female)	1,330 (54.1%)	1,856 (51.3%)
Race		
White[†]	1,927 (78.4%)	2,510 (69.4%)
Hispanic[†]	236 (9.6%)	580 (16.0%)
Black[†]	216 (8.8%)	430 (11.9%)
Age (mean ± SD)[†]	42.23 ± 21.36	39.10 ± 20.07
LOS (mean ± SD)[§]	21.39 ± 168.08 median=10	12.02 ± 32.15 median=7
Primary diagnosis[‡]		
Major depression[§]	879 (36.3%)	1,144 (32.4%)
Bipolar[†]	327 (13.5%)	319 (9.2%)
Schizophrenia	228 (9.4%)	353 (10.3%)
Schizoaffective	217 (9.0%)	326 (9.5%)
Substance abuse/dependence[†]	559 (23.1%)	993 (28.9%)
Missing[†]	35 (1.4%)	185 (5.1%)

**P*<.05, §*P*<.01, †*P*<.001

‡Diagnoses are not mutually exclusive

each of the guidelines the number of occasions during the study period that a standard was not followed. Note that the percentages shown are based on the number of patients for whom a given guideline would be relevant. For example, guideline #1 is relevant only for patients with a diagnosis of schizophrenia; thus, the 51 patients for whom that alert was issued represent 22.4% of all patients with schizophrenia treated in year one. Table 4 also displays the results of the comparisons of year one to year two for each guideline individually. For only two of the guidelines was

Table 4.— Alerts Issued for Each Guideline

	Guideline	Year 1 N (%)[ø]	Year 2 N (%)[ø]	χ^{2}[¶]
#1	Schizophrenia, no antipsychotic prescribed	51 (22.4)	19 (5.4)	37.72[†]
#2	Major depression, no antidepressant prescribed	246 (28.0)	4 (0.4)	341.84[†]
#3	Antipsychotic prescribed, no diagnosis of psychosis	221 (9.0)	146 (4.0)	57.35[†]
#4	Medication[Ω] prescribed for nonapproved diagnosis	127 (11.1)	118 (6.5)	19.35[†]
#5	Substance abuse/dependence, receiving benzodiazepine	107 (19.1)	84 (8.5)	37.82[†]
#6	>1 antipsychotic prescribed > 7 days	52 (2.1)	113 (3.1)	5.61*
#7	Medication[¥] prescribed baseline labs incomplete	11 (1.1)	25 (1.8)	2.41
#8	Medication[¥] prescribed, follow-up labs incomplete	56 (5.9)	48 (3.6)	6.42*
#9	Medication[¥] prescribed, no blood level ordered	125 (13.2)	81 (6.2)	27.78[†]

ø% is based on the number of patients with the diagnosis or treatment described in the listed guideline

¶—**P*<.05, §*P*<.01, †*P*<.001

Ωbromocriptine, carbamazepine, clonidine, lithium, propranolol, valproic acid

¥carbamazepine, lithium, valproic acid

there not a statistically-significant decrease in the number of alerts issued in year two. Prescribing more than one antipsychotic concurrently, alert #6, was more common in year two. Alert #7, not obtaining the required baseline laboratory studies, also increased but not significantly; the number of cases was small in both years (n=25 *vs* 11).

Physicians responded to 67.4% of alerts issued (671 of 996) in year one. In year two the response rate was 54.8% (350 of 638). This decrease in response rate was statistically significant ($\chi^2 = 25.97$, df=1, $P<.001$), although the actual number of alerts not responded to was less than in year one (288 *vs* 325) because of the dramatic decrease in total alerts issued in year two. There were two types of responses, changing the nonstandard practice that caused the alert to be issued (eg, change in medication, ordering a required laboratory test) or documenting the reason for this practice (eg, withholding an antipsychotic in a patient with schizophrenia because of adverse drug effects). Change in practice accounted for 20.5% (131) of all responses in year two and 27.6% (275) in year one. Documentation of an exception to the practice standard (which was subsequently approved by the Medical Director's office) was provided in 34.3% of cases (219) in year two and in 39.8% (396) in year one.

Discussion

The results of this study indicate that physicians will respond to feedback about nonstandard practices and that a clinical monitoring system such as that described in this report can improve adherence to treatment guidelines. These findings are consistent with previous reports,[1,17,20,22] and extend earlier research in several ways. First, this study was completed in a clinical rather than a research setting and used a system that was in routine use hospital-wide. Second, all of the features noted by Elson and Connelly as conducive to change are included in this system.[21] The feedback occurs within a day of the event in question; the physician has the opportunity to change the care for the patient in question. (The more typical form of feedback, reports reflecting trends in clinical decision making or prescribing practices over a specified time period, can also be issued.) The alert messages can include new information, thus providing education as well as reminders. For example, the potential for a drug-drug interaction can be noted in the alert that is issued when either drug is prescribed. Third, the system meets Greco and Eisenberg's requirement for providing the physician with the capability to act immediately on the issue described in the alert by providing access to laboratory, pharmacy, and diagnostic data directly from the "message screen."[15] That is, there is a series of function keys that appears on the computer screen with the alert message; selecting one of these function keys allows the physician to review information relevant to the decision. In the same way the physician also has access to the documentation features so that the rationale for continuing a nonstandard practice can be given.

While the effectiveness of the system in increasing compliance with established guidelines was demonstrated, a large number of patients were discharged without the physician responding to the alert. Response varied by practitioner, and the performance of doctors with lower response rates might have improved if additional incentives and/or penalties had been applied, an approach discussed elsewhere.[15] Response also varied by type of guideline. Notices such as those calling attention to missing laboratory tests may almost always be responded to and the treatment standard followed because the practice is one that the clinician intended to follow. By contrast, nonresponse may be common when the notification concerns an abnormal laboratory value that is regarded by the physician as clinically irrelevant. In other instances, a practice that deviates from the standard may reflect a difference in treatment philosophy or be due to a belief that a given patient is not well-served by the general case scenario addressed in the guideline. In this study the only alert that was not significantly less common in year two was "concurrent prescription of more than one antipsychotic for more than seven days." Secondary analysis revealed that in almost all of these instances physicians were prescribing one of the newer "atypical" antipsychotics, two of the three of which were not available in year one of the study. Such concurrent prescribing is an emerging trend which the alert system was of value in identifying. As a result, the original treatment guideline was revised. The fact that increased compliance with baseline laboratory tests was not achieved is not of great concern given the small number of patients involved.

Limitations of the study include problems inherent in using historical controls such as the influence of variables present in only one of the two years and changes in the institution and/or practitioners over time. For example, educational programs and greater experience with the medications and procedures addressed by the guidelines and with the alert system itself may have reduced the number of alerts. Another limitation is that these guidelines are not necessarily representative of all practice parameters, and some proposed standards may be less readily accepted. Also, the patients and physicians at the study site may not be representative of those in other health-care settings. Changes in the medical staff and in the patient mix may have influenced the results.

Another issue in interpreting the results is that the system described consists of a number of components (the guidelines themselves, a real-time monitoring feature, online notification and response capabilities), and this study was not designed to determine the relative contributions of each feature and function. We can only conclude that the system as a whole was effective. Similarly, while we presume that communication of the institutional commitment to assuring that treatment standards are followed was a necessary condition for the successful implementation of the system, the unique contribution of this variable to the observed change in physician practices could not be determined.

In summary, practice guidelines and the question of physician adherence to established treatment standards have become important issues in American medicine. As noted by Greco and Eisenberg, these questions are especially important today "because physicians' decisions influence not only the health of their patients but also the cost of their care."[15] Previous research has shown that practice guidelines must be offered in some form that will increase the likelihood that they will be applied in actual practice, and clinical decision support systems such as that described by the investigators are one approach to this problem. However, advances in this field depend upon systematic evaluations of effectiveness and a commitment by institutions and organizations to incorporate these systems into daily clinical activities.[26]

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Assessing Outcomes: Identifying Psychiatric Patients with Severe and Persistent Illness

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ABSTRACT—*Background:* Identification of psychiatric patients with severe and persisting impairments can facilitate treatment, aid in program planning, and provide data for cost-of-care projections.

***Methods:* In this prospective study of patient outcomes, 1,679 inpatients were classified on admission using a functional status measure developed by the authors. Consenting subjects were reassessed at discharge and at 3, 6, and 12 months postdischarge to determine what proportion of patients classified as low functioning on admission remained so at follow-up.**

***Results:* Patients classified as low functioning on admission represented 23.4% of the sample; the proportion that remained low functioning at the follow-ups ranged from 56.1% to 65.2%. Compared to the high functioning group, three times more low functioning patients were rehospitalized within 12 months of discharge (9.4% *vs* 32%).**

***Conclusions:* Patients with increased risk of persisting disability can be identified on admission using commonly available clinical measures. Of patients with low functioning on admission, more than half will have long-term impairment.**

Introduction

PREVIOUS research has shown that there is a segment of the population of psychiatric patients whose mental impairment is both severe and persistent.[1-9] Data about these individuals are needed because they consume a disproportionate amount of health services, and many do not respond to usual treatments.[10,11] Furthermore, mandates from payers and accrediting agencies have made it increasingly important for health care facilities to assess the outcome of these and other high risk patients.[12] In response to these needs the Institute of Living, developed a hospital-wide Outcome Assessment Program.[2,13] Since 1993, patients have been routinely assessed at admission and discharge and at several follow-up points. The program includes automated tracking procedures and standard measures of functional status, symptoms, and service use. Inpatient assessments have been completed for more than 13,000 episodes of care; 12 month follow-up data are available for approximately 1,000 patients. In the last year, corresponding clinician assessments have been added and selected subsets of patients followed for more in-depth study. This report is one of a series from this project.[2-3,14,15]

The purpose of this study was to develop and evaluate a method for identifying on admission patients at increased risk for severe and persistent impairment. For a large sample of psychiatric inpatients the authors determined 1) the proportion of admissions classified as low functioning, 2) the proportion of this group who continued to be markedly impaired at follow-up, and 3) the types and amount of aftercare services utilized by low functioning patients compared to all other patients studied.

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Methods

Sample.—The sample consisted of all (1,711) admissions to a private, not-for-profit psychiatric hospital during an 18 month period. Insufficient admission data for the study's independent variable were available for 32 patients, leaving a sample of 1,679 patients. The sample was primarily White (82%) and adult (86% over age 18); approximately half (52%) were women, 48% had previous psychiatric admissions, and 31% had been admitted within 12 months prior to the index admission. The primary diagnosis for 39% of patients was a major mood disorder; 16% had a substance abuse disorder, 15% schizophrenia or schizoaffective disorder, 14% an anxiety, adjustment or eating disorder, 8% a cognitive disorder, and 8% some other diagnosis.

Procedure.—The functional status classification was based on seven admission variables: 1) clinician rated functional level using a standard scale, the Global Assessment of Functioning (GAF);[16] 2) ability to manage activities of daily living (ADLs), an independent rating made by utilization review nurses based on chart review; 3) patient rating of global functioning; 4) patient rating of global productivity; 5) patient rating of global stress; 6) past history of psychiatric hospitalization (total number); and 7) history of hospitalization in the 12 months prior to the index admission (yes/no). Number of hospitalizations in the 12 months prior to the index admission was obtained via chart review. Patient ratings were collected using a questionnaire administered by unit nursing staff at admission. The ratings of overall functioning, productivity and stress used a five-point Likert scale. For the item assessing capacity to perform ADLs, the possible responses were 1) can carry out work/home duties and social activities, 2) can maintain most but not all duties and activities, 3) can maintain some duties and activities, 4) can only maintain own activities of daily living, or 5) needs assistance performing ADLs.

These seven variables were used as indicators of low functioning by selecting clinically meaningful cutpoints rather than statistical ones to dichotomize the ratings. For example, GAF was cut at "severe symptoms," a score of < 50. The variable was indicative of low functioning if the rating fell below the cutpoint. Table 1 shows for each variable the proportion of the sample falling above and below these cutpoints. The ratings were dichotomized and a sum score derived; this approach was used rather than summing as continuous measures to minimize the number of patients excluded due to missing data. A "global severity index" was calculated for each patient based on the number of variables (zero to seven) with a rating below the established cutpoint. Patients with zero or one variable below the cutpoint were classified as high functioning, those with two to three medium, and patients with four or more were defined as low functioning (23.4%, n = 393).

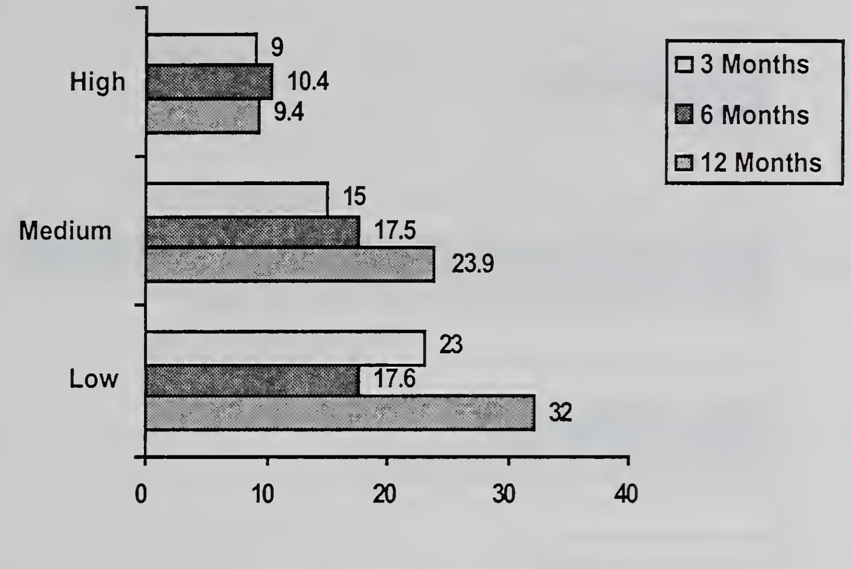
The validity of the global severity index was assessed by calculating the correlations between this index and 18 follow-up measures (including stress, productivity, functioning, and service use data obtained from patient-completed questionnaires) at discharge, and three, six, and 12 months postdischarge. Correlations were low (<.30), but 15 of 18 were highly significant (*P*<.01), attesting to the predictive validity of the global index.

Table 1.—Admission Variables Used to Determine Functional Status

Variable	**Cut Point***	**Frequency (%)**
Axis V GAF§	> 50	991 (66.1)
	≤ 50	509 (33.9)
Patient-rated global productivity	Unproductive or somewhat unproductive	562 (39.8)
	Somewhat productive or better	850 (60.2)
Patient-rated global stress	Severe or extreme	594 (41.9)
	Moderate, minimal, or none	823 (58.1)
Patient-rated global level of functioning	Low or impaired	381 (27.2)
	Fair to high	1,021 (72.8)
Activities of daily living	Can only care for self or needs assistance	295 (21.0)
	Can do some, most, or all activities of daily living	1,112 (79.0)
Previous psychiatric hospitalizations	More than one	571 (48.1)
	One or none	615 (51.9)
Hospitalized in 12 months prior to the index admission	Yes	539 (45.4)
	No	647 (54.6)

*A cut point was selected for each variable; ratings below the cut point indicated low functioning.
§Global Assessment of Functioning

Figure 1.—Comparing Groups of Low, Medium and High Functioning Patients on Rehospitalization Rates at 3, 6, and 12 Months Post-Discharge



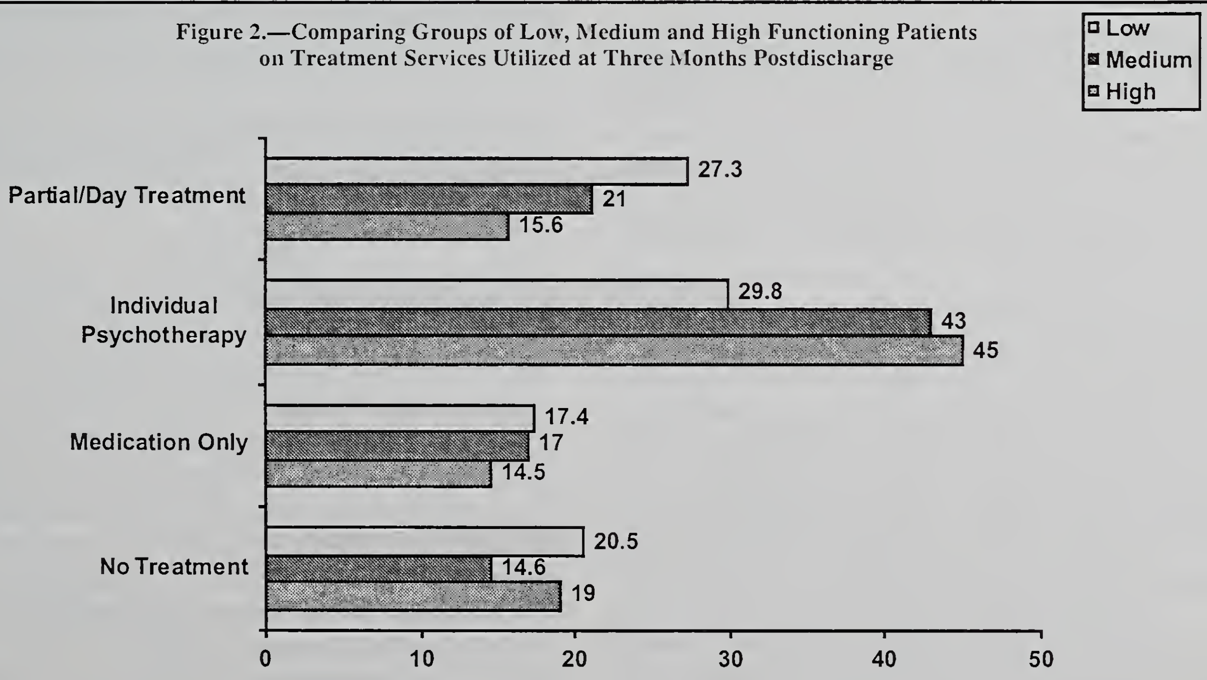
Percent Rehospitalized

Three months (*P* <.0002), Six months (*P*=n.s.), Twelve months (*P* <.006).

Results

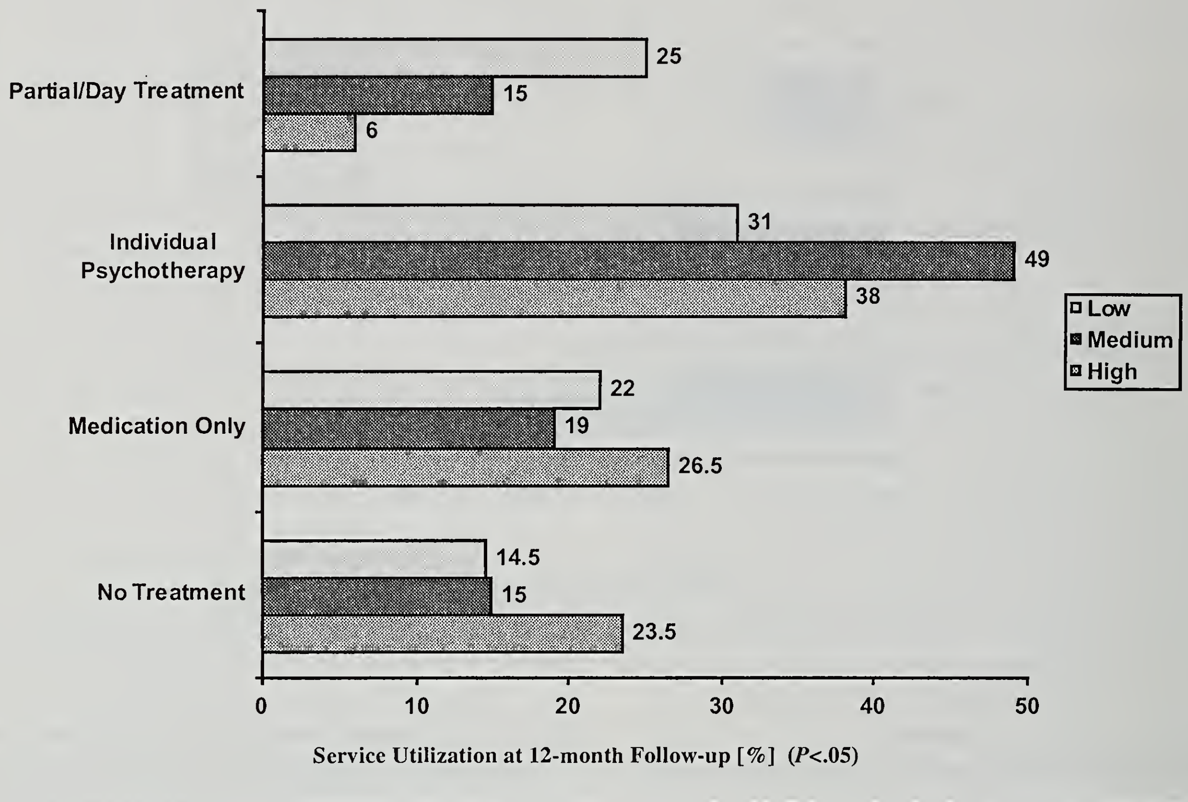
Demographic Composition.—Low functioning patients were more likely to be women (56.7% *vs* 47.3% in the high functioning group, *P*<.01) and over age 18. The proportion of children in the high, medium and low functioning groups was 23%, 11%, and 6%, respectively (*P*<.0001). This finding was independent of history of previous hospitalizations (ie, when previous hospitalizations was held constant). Cross tabulating diagnostic groups by functional status was highly significant (*P*<.0001). The low functioning group had greater percentages of schizophrenia and schizoaffective disorder and fewer patients with

Figure 2.—Comparing Groups of Low, Medium and High Functioning Patients on Treatment Services Utilized at Three Months Postdischarge



Service Utilization at Three-month Follow-up [%] (*P*<.03)

Figure 3.—Comparing Groups of Low, Medium, and High Functioning Patients on Treatment Services Utilized at 12-months Postdischarge



anxiety, adjustment and eating disorders. There was almost no difference in the proportion of minorities within each functional status group.

Persistence of Impairment.—A low functioning group was identified at each follow-up point (discharge and at three, six, and 12 months after discharge) by combining the patients' global ratings of stress, productivity and functioning into a composite score and taking the lowest portion of the sample (defined prospectively as all patients with a score less than the median); the percentage of patients classified into this low functioning group ranged from 31% to 46%. The proportion of initially low functioning patients who remained so at follow-up was 46.6% at discharge, 65.2% at three months, 56.7% at six months, and 56.1% at 12 months. Attrition reduced the sample at each successive follow-up point (3 months, n = 728; 6 months, n = 537; 12 months, n = 227). However, the proportion of the sample classified as low, medium and high functioning was approximately the same at all time periods (ie, approximately one-third).

At all follow-up points, patients in the low functioning group were more likely to be taking medications (77% to 87% of low functioning patients compared to 57% to 63% of high functioning patients). At each follow-up point this group of patients also had the highest rehospitalization rates (see Fig. 1). Compared to better functioning patients, the low functioning group was less involved in individual psychotherapy and more likely to be enrolled in partial hospital or day treatment programs (see Figs. 2 and 3). This pattern was found at all three follow-up points. At three months the low functioning patients had the highest rate of no treatment (20.5%), but at six and 12 months the rate for this group was the lowest (18% and 14.5% respectively).

Discussion

These findings indicate that more than half of psychiatric inpatients classified as low functioning on admission will have persisting impairments. The study also demonstrates that the patients at increased risk for such a course can be identified using commonly available admission variables. While the proportion of patients classified as low functioning may vary from facility to facility, this method of assessment may be useful for many health-care providers. Applications of these findings include 1) identifying patients likely to have persisting dysfunction, 2) creating treatment programs specific to the needs of this group, 3) tracking patients of interest, such as those no longer participating in treatment, 4) projecting cost of care, and 5) health-care policy and planning.

For the population studied, slightly more than half of inpatients classified as low functioning upon admission will, by self report measures, continue to be low functioning throughout the year following hospital discharge. This poor outcome is also evident if service utilization measures are used as a proxy for symptoms and functional status. For example, at the end of the follow-up period nearly one-third of the low functioning group had been hospitalized compared to only approximately 10% of high functioning patients. The data summarized in Figs. 2 and 3 further support the conclusion that the group of patients identified as low functioning on admission remain substantially more impaired than other patients.

Long-term outcomes of patients with severe and persistent illnesses may be of particular interest in capitated systems of payment in which providers share more risk. Market forces are not tangible entities, but their demands are intensely felt by providers.[17] In the near future it may become necessary to restructure the delivery of care such that patients at risk for persistently poor functioning are identified early in the course of treatment and targeted for special interventions. These patients may also require more intensive and more highly specialized aftercare. In our view, outcome evaluation is an essential component of risk management, and reliable outcomes data, specific to the population of patients being served, are needed to determine appropriate capitation rates. For example, the finding that 21.1% of the sample as a whole was rehospitalized during the year following the index admission is consistent with previous reports.[6] This figure is a serious underestimate of the service needs of the patients identified in this study as low functioning, however.

This sample may not be representative of other patient populations, and a different mix of subjects may have altered the findings. Another limitation is the attrition of the sample over time. The patient groups available at each follow-up point were representative of the population served, but it is impossible to know with certainty what effect the patients lost to follow-up would have had on the results. As noted by others, nonresponse is a major problem in outcomes research.[18] The variables used as indicators do not reflect all possible measures, and further study is needed to evaluate other candidate markers of illness severity and functioning. Readmission data, for example, have been widely used to reflect clinical status and are essential components of cost of care calculations. These rates may be difficult to interpret, however, since they can reflect a variety of nontreatment factors, such as the availability of support systems, situational factors, quality of aftercare services, and the admission policy of the payer.[19]

Diagnosis was not used in this study to classify or predict course of illness. We emphasized various aspects of patient functioning because functional status has recently become recognized as an essential measure and one that may be a more useful method of classifying patients than symptom-specific approaches.[1,13,20-27] In addition, continuously poor functioning patients may carry any diagnosis, psychiatric disorders vary widely in severity, and the admission diagnosis is often changed.[2,19] Previous studies have also suggested that diagnosis alone has little predictive value in determining outcome, and using it to define "severe" illness and predict chronicity does not take into account level of functioning and quality of life.[4]

In summary, these findings indicate that commonly available admission variables can be used to identify patients who are at increased risk for persisting dysfunction. The development of clinically useful models for predicting long-term outcomes is in its early stages, but the methods described in this paper represent a practical approach to the present day challenges many provider networks face. Further investigation is underway to test this model in other populations and to explore alternative severity indicators and classification algorithms.

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HUMAN SERVICES
UNIVERSITY OF MARYLAND, BAL

The Retreat's physicians, gathered in Center Building, late 19th century. (Now on exhibit at the Institute of Living.)

Alcohol Screening and Brief Intervention: Where Research Meets Practice

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ABSTRACT—Numerous studies have consistently shown that quick screening instruments can identify people whose drinking is likely to present health risks and that low-cost, brief interventions are effective in reducing drinking among many such at-risk drinkers. This article describes the results of a one-year policy analysis that explored how alcohol screening and brief intervention (SBI) can be moved to widespread clinical applications in the United States. It introduces the concept of risky drinking and considers the potential of this new technology to reduce it. The research evidence behind this approach is reviewed, and a description of current programs in this and other countries beginning to apply SBI is provided. Economic issues attendant to applications are identified and discussed. The potential for applications in health care is analyzed and summary conclusions from market research are set forth. Recommendations are offered for immediate action.

Abbreviations Used in Text

SBI = Screening and Brief Intervention
EAP = Employee Assistance Program
CATS = Community Alcohol Teams

IN 1601 James Lancaster, an English sea captain, conducted a novel experiment to reduce scurvy among British sailors. He provided a daily ration of lemon juice to one group of sailors while another group received standard rations. Forty percent of the sailors in the control group died from scurvy: all of those receiving lemon juice remained healthy. Another study was published by James Lirid in 1757 proving the efficacy of citrus in preventing scurvy. Nevertheless, the British navy did not require a daily ration of citrus until 1795 and merchant sailors did not benefit from this knowledge until 1865.[1] It took 264 years to apply research results after the initial field trial!

A similar opportunity presents itself today in dealing with alcohol abuse. As the health-care system undergoes rapid and radical change, ways must be found to reduce the enormous costs related to the use and abuse of alcohol. While there is no simple way to prevent alcoholism, recent research has developed a low-cost and efficacious technology that holds promise in identifying and managing the most widespread and costly component of our alcohol problem—alcohol misuse. These procedures are commonly called "screening and brief intervention"(SBI). It is likely that such procedures can be applied to large numbers of people at risk throughout the health-care and human service systems so as to reduce alcohol-related problems. This paper describes the results of a policy study of SBI that evaluated scientific evidence, current programs, economic issues, and potential markets for this new health service.

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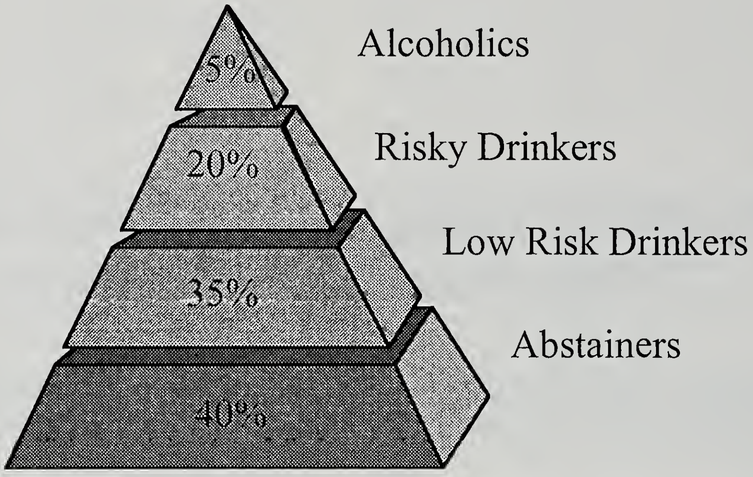

The Drinkers' Pyramid

The estimates above are based on the 1992 National Longitudinal Alcohol Epidemiologic Survey.* ***Alcoholics* *include the 4.38% identified by the survey as dependent in the past year.* ***Risky Drinkers*** *are those whose average daily consumption was more than two drinks for men and one for women or who drank 5+ drinks in one day in the past year.* ***Low Risk Drinkers*** *have been estimated by subtracting the other categories from 100%.* ***Abstainers*** *in the survey included those who had fewer than 12 drinks in the previous year as well as those who did not drink at all. All numbers were rounded for this estimate; that for abstainers was rounded down slightly because it included very light drinkers.*

Figure .—Estimated Proportions of Adult Americans*

Since most physicians know alcohol can cause psychological and physical dependence, it is common to think that the harm caused by alcohol is related to use *only* by those who are "addicted" or "dependent." As logical as this belief may seem, it is not entirely true. As Fig. 1 illustrates, those dependent on alcohol, often called alcoholics, constitute only about 5% of the adult American population. These drinkers obviously account for a considerable portion of the burden of illness associated with alcohol misuse, and such people usually require specialized treatment for their condition. On the other end of the scale, about 40% of Americans drink infrequently or not at all. In between is another 35% who drink moderately and at low risk, and who are unlikely to experience problems due to alcohol use. While epidemiological surveys have in the past neglected to measure the remainder of the population, a recent national survey enables us now to estimate that approximately 20% of the adult population—about 40 million Americans—drink in a way that creates a risk of harm to themselves or others.[2] Since there is no commonly accepted name for this population (perhaps itself an important observation), we call this group "risky drinkers." Risky drinkers are defined as people who are *not* alcohol dependent, but who drink *above* safe limits on a regular basis or drink more than is safe on particular occasions. This category encompasses a broad range of drinkers from those just above the border of "low risk" to drinkers who get drunk daily but do not exhibit the signs of dependence. It should be noted, as well, that many people move from one category to another, either by increasing or reducing their alcohol use.

Heavier drinking has been shown to result in an assortment of serious problems (personal, familial, social, legal, health) that, when quantified, account for enormous health and social costs, as shown in Table 1.[3] While the existing data offer little insight into the relative contribution of alcohol dependence and risky drinking to aggregate problems and their associated costs, the fact that risky drinkers outnumber alcoholics by roughly four-to-one suggests an important contribution of risky drinking in virtually all problem areas.

As illustrated in Table 2, a sizable proportion of many prominent chronic illnesses and injuries, resulting in death, in addition to those directly attributable to alcohol, is indirectly attributable to the misuse of alcohol.[4] Moreover, the role of alcohol as a contributor to a wide variety of social costs, ranging from health-care expenditures to crime, is substantial. Not included are the nonpecuniary costs associated with spousal and child abuse, fetal alcohol effects, and many other types of human suffering that evade standard measures.

Table 1.—Costs of Alcohol Misuse, 1990[3]

Direct health care costs		$10.5 billion
Short-stay hospitals	$4.6 billion	
Specialized treatment centers	$3.5 billion	
Nursing homes	$1.1 billion	
Other	$1.3 billion	
Lost productivity: Illness		$36.6 billion
Lost productivity: Death		$33.6 billion
Fetal alcohol syndrome		$ 2.1 billion
Other (crime, motor vehicle crashes, incarcerations, etc.)		$15.8 billion
TOTAL		**$98.6 billion**

Table 2.—Alcohol-Related Causes of Death

Cancer of the mouth, esophagus, larynx	50%+
Cirrhosis of liver without mention of alcohol	50%
Biliary cirrhosis	50%
Acute pancreatitis	42%
Chronic pancreatitis	60%
Motor vehicle accidents	42%
Accidental falls	35%
Accidents caused by fire	45%
Accidental drowning	38%
Suicide or self-inflicted injury	28%
Homicide	46%

Table 3.—The Alcohol Use Disorder Identification Test (AUDIT)

1. How often do you have a drink containing alcohol?
2. How many drinks containing alcohol do you have on a typical day when you are drinking?
3. How often do you have six or more drinks on one occasion?
4. How often during the last year have you found that you were not able to stop drinking once you had started?
5. How often during the last year have you failed to do what was normally expected from you because of drinking?
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?
7. How often during the last year have you had a feeling of guilt or remorse after drinking?
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?
9. Have you or someone else been injured as a result of your drinking?
10. Has a relative or friend or a doctor or other health worker, been concerned about your drinking or suggested you cut down?

A means to address and reduce risky drinking has been widely tested in research with consistently positive results. Screening procedures have been developed and tested for the early identification of risky alcohol consumption.[5] Self-report screening questionnaires carry the advantages of low cost, user acceptance, and the ability to be administered anywhere by persons having limited training. A variety of such questionnaires, including the AUDIT (printed in Table 3), have been developed to identify mild and moderate alcohol problems as well as more severe problems.[6] In order to make screening for the identification of drinking problems less threatening, questions about alcohol use have been incorporated into questionnaires covering broader lifestyle problems, such as exercise, diet, tobacco use, sleep, and sexual functioning.[7-8] Studies of such verbal report techniques have found a high degree accuracy and user acceptance in most clinical situations.[9]

The ability to identify risky drinkers by simple screening techniques creates opportunities for preventive measures. Clearly, persons identified as likely to have severe alcohol-related problems or alcohol dependence should be referred to a specialist for diagnosis and treatment. However, if a representative cross-section of the population is being screened, it is likely that many more risky, but not alcohol-dependent, drinkers will be found. Recognition of this reality has stimulated development of simple procedures—called brief interventions—that are effective and economical in reducing mild and moderate alcohol problems.

Brief interventions constitute a variety of activities directed at persons who engage in risky drinking, but who are not alcohol dependent. These interventions are of low intensity and short duration; typically consisting of five to 60 minutes of counseling and education, with usually no more than three to five sessions. They are intended to provide early intervention, before or close to the onset of alcohol-related problems. The content of such brief interventions has varied somewhat in research, but most programs are instructional and motivational, designed to address the specific behavior of drinking with feedback from the screening, education, skill-building, and practical advice rather than intensive psychological analysis or specialized treatment techniques.

Patients who are dependent on alcohol should be referred for more intensive treatment, the goal of which would usually be abstinence. Risky drinkers, on the other hand, may play a more active role in choosing their own goals. Some may seek abstinence, but others may seek to reduce their drinking. Such an exercise of choice may give one a sense of ownership over one's own health behavior, and this may contribute to the success of this technique.

Over the past 20 years at least 35 clinical trials of such screening and brief intervention (SBI) procedures have been conducted. The cumulative evidence of this research is impressive in terms of consistency, demonstrated effectiveness, and implications for practical application. While trials have followed different designs and had differing results, a consensus seems to exist that brief interventions are efficacious and cost-effective for most populations at risk. In the words of a recent literature review of 32 clinical trials, "The results from this substantial body of clinical trials are remarkably consistent across cultures: brief intervention yields outcomes significantly better than no treatment, and often comparable to those of more extensive treatment."[10]

Rather than thinking about the effectiveness of SBI in treating any given individual, we must consider its capacity to reduce overall risky drinking in particular target groups within the whole population. For most drinkers, alcohol-related risk is associated with the consequences of acute intoxication. By reducing the amount people consume per occasion, or by reducing the frequency of drinking that produces impairment, brief intervention could lower the incidence of accidents, injuries, arrests for drunkenness, and interpersonal problems such as abuse and violence. By reducing the total amount of alcohol regularly consumed, brief intervention could also reduce the consequences associated with chronic heavy drinking such as hypertension, fetal alcohol effects, liver cirrhosis, depression, anxiety disorders, and a variety of other chronic diseases. It should be noted that the SBI approach need not be designed to reduce risk to zero; success for some may be to reduce the level of risk from high to moderate. Seen in this context and judged by such criteria, SBI holds the potential to reduce risky drinking significantly.

Several factors contribute to make this a propitious time to advance SBI to widespread applications. Changes in the organization and management of health services are placing a premium on preventive care and lower cost interventions. Treatment of heart disease, cancer, and mental disorders increasingly requires medical professionals to consider patients' use of alcohol. Social movements are galvanizing concern over such "second-hand effects" of risky alcohol use as drunk driving, spousal and child abuse, fetal alcohol effects, and violence. Employers are seeking better ways to increase productivity and reduce insurance costs. Government efforts to reduce entitlement programs have begun to identify the need to remove the factors that keep recipients from resuming productive employment. Some industries that have suffered cuts in recent years—including substance abuse treatment and employee assistance programs (EAP)—are seeking new ways to serve larger populations. These factors, among others, can be expected to support efforts to transfer SBI from research to practice.

HUMAN SERVICES
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Methods

To explore the feasibility of developing widespread applications of SBI, a variety of issues were investigated using methods appropriate to four major topics: 1) the adequacy of the research foundation, 2) the state of current applications in the United States and abroad, 3) the potential economic considerations, and 4) the incentives and obstacles of applications in health-care and other settings.

Research base.—To determine the directions of current research, the relevance of research to applications, and the attitudes of researchers toward the readiness of this approach for practical applications, a survey of researchers was undertaken. The survey was designed to meet three objectives: 1) to identify current SBI research and demonstration projects; 2) to elicit researchers' judgments about the prospects of widespread applications; and 3) to gather literature and identify new research findings. U.S. researchers were identified through literature reviews, research networks, and National Institute on Alcohol Abuse and Alcoholism (NIAAA) grant recipient listings. Those selected had either completed research on this topic or were currently engaged in an on-going project.

Current applications.—To identify current applications of SBI, researchers in four countries and a representative of the World Health Organization (WHO) were asked to report on SBI programs. The survey of American researchers included questions about applications in this country, and programs having requested training materials from the University of Connecticut were contacted. The intent of this approach was not to compile an exhaustive list of current SBI applications but to gain a perspective on the variety of contexts in which SBI might be applied, the circumstances that provide incentives to such applications, and to judge whether such current applications might help in broader dissemination efforts.

A review of the international status of SBI activities was accomplished through commissioned reports from foreign observers and a review of the international literature. Foreign observers were asked to review current research projects, demonstration programs, and national initiatives within their countries. Reports were commissioned from Australia, the United Kingdom, Norway, and Canada, as well as the World Health Organization.

Economic considerations.—Since the development of widespread applications for new technology usually depend on whether their additional cost will save money over some reasonable period of time, the current literature on the costs of alcohol misuse was reviewed as well as existing analyses of potential savings that might accrue from early identification and management of risky drinking.

Potential market analysis.—Although SBI has been developed largely in health care settings, clinical trials have focused on the efficacy of the procedures more than practical issues of dissemination and implementation. To explore the latter concerns, qualitative market research was conducted to provide an understanding of four major economic sectors: health care, workplace, human services, and higher education (some government policy makers were also included). The purpose of the market research was to evaluate the general knowledge, reactions, and the willingness of representatives of those markets to employ SBI to reduce risky drinking. The process was not intended to be a scientific survey yielding statistically representative results, but rather to provide important qualitative information upon which reasonable judgments might be made.

There were four objectives: 1) to clarify issues of communications about SBI; 2) to gauge the value of this approach for each sector; 3) to identify existing obstacles and supports for applications; and 4) to provide insight on the best methods to market the procedure. Two methods were used: focus groups and individual interviews. A total of 85 individuals participated. Seven focus groups were conducted involving 55 people in three cities; 30 individuals were interviewed, either in person or by telephone.

Results

1) Researchers and research topics.—There is a very active group of clinical investigators and health services researchers currently involved in SBI studies. Most research is sponsored by NIAAA, but the National Institute on Drug Abuse (NIDA), foundations, and health-care organizations have recently become involved. Several different kinds of research are being conducted. First, there are replications of previous studies originally conducted outside the U.S.A. in primary care and emergency room settings. Second, clinical trials are being conducted to test new applications, such as the effect of brief intervention with hypertensive heavy drinkers, based on the hypothesis that reduced drinking will lower blood pressure. Third, for the first time researchers are evaluating demonstration programs and community-based health services that have begun to incorporate brief intervention into routine practice. Finally, researchers are studying the mechanisms of action behind successful behavior change and the conditions that facilitate or impede the diffusion of this technology.

2) Obstacles to applications.—The primary obstacles researchers are finding with the use of SBI in applied settings are: 1) lack of monetary incentives to provide the service; 2) lack of time for overburdened health-care workers; and 3) training and motivation of professionals to administer screening and intervention to at-risk drinkers. Successful implementation of the technology in both research and applied programs was identified at those sites where clinicians were reimbursed for their services and were well trained for the task. Most researchers were in agreement that technical assistance is needed to transfer the technology to applied settings. Some stated that training packages should be developed and adapted to specialty settings (eg, physicians in primary care clinics, EAP counselors in industry, peer counselors in college settings). Several researchers indicated that a training center or training consultants would be advantageous in the transfer of this technology.

3) Readiness for widespread applications.—Most researchers believe that the knowledge base for SBI is well documented and the technology should be disseminated as soon as possible. A number of researchers have already incorporated it into their hospitals, clinics, or medical school curricula. Several researchers, however, stated that more specialized studies on SBI still need to be undertaken. Topics suggested for further investigation included cost-effectiveness analyses, evaluation of special populations, incorporation of pharmacological therapy, and interventions with drug abusers.

Current Applications

The following summary of domestic and foreign programmatic activities describes just some of the programs found during this study. These programs illustrate a wide variety of ways in which SBI has already been applied to "real world" settings.

1) Research "spin-offs."—A wide variety of programs have been developed to apply SBI research in practical (usually clinical) settings. This is primarily a "spin-off" result of the screening instruments, intervention procedures, and training programs developed for use in brief intervention research. Many of these programs have been adapted directly from clinical trials; others have developed from grants to produce training materials. Some, however, have arisen independent of research, and more such programs can be expected.

2) Domestic programs.—In the United States, SBI programs fall into three types: hospital programs, primary care, and dissemination. Several hospital programs involve specially designated staff who provide screening, brief interventions, and referral to specialized treatment. The focus may be on emergency department cases or a wider range of hospital services. The Consultation Service at the 450-bed University Hospital in Madison, Wis., and Project ARIES at the emergency department of the Milwaukee County General Hospital are examples of this type of service. The largest hospital program is the New York State Healthcare Intervention Service, initiated in 1989, which operates in 18 hospitals and screens all hospital admissions for alcohol abuse. Although early identification is included in this program, its primary focus is on screening for alcoholism and referral to more intensive services. Research on this program[11] demonstrates its effectiveness in the early identification of alcoholics and problem drinkers. Despite these promising findings, a similar program initiated in Connecticut, called Bridges to Health, failed to make inroads into hospital settings.

Several programs are based in primary care clinics and health maintenance organizations. In New York State the Community Drug Assessment and Treatment Systems Program routinely screens for alcohol, tobacco, and other drug use. The purpose of the program is to identify early users who are seeking primary medical care services and to intervene as needed. Brief interventions as well as more intensive treatments are provided as appropriate. The demonstration program currently operates in five hospital-based outpatient departments and two freestanding diagnostic and treatment centers. Funding is provided through New York's Medicaid program.

Other programs within primary care include the Milwaukee Drinker's Checkup, an HMO service; the West Washington University stepped care program, which begins with brief interventions but includes more intensive services; and Project HAL, a computerized health and lifestyle assessment at the University of Connecticut Health Center that includes brief advice following screening.

The Health Care Financing Administration and five states have initiated programs to address the needs of Medicaid-eligible pregnant substance abusers, which includes screening and incorporates brief intervention as an option. In addition, Oregon has begun a comprehensive effort as part of its state health plan to screen all members, initially for dependence and abuse but ultimately for all types of risky substance use.

A number of initiatives involve the development and dissemination of practice guidelines and training manuals, as well as the actual training of nurses, physicians, and other health professionals. These include initiatives at the University of Cincinnati College of Nursing and Health and Department of Medical-Surgical Nursing. The University of New Mexico conducts training conferences to teach instructors the "art" of motivational interviewing techniques. Project NEADA (Nursing Education in Alcohol and Drug Abuse) at the University of Connecticut developed a model SBI curriculum for nursing education and continuing education modules, including video training tapes. NIAAA has recently published *The Physicians' Guide to Helping Patients with Alcohol Problems,* an SBI guide for primary care physicians that will be distributed widely.

One program stands out from others in combining hospital-based, primary care, and training approaches.

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The Escondido, California, Health Care and Community Services Project, managed by the City of Escondido, includes services at the Palomar Hospital and the Escondido Community Clinic, in addition to providing training within San Diego county and for other municipalities. It also includes a new sobering-up center, where people are screened and referred to specialized services. Started in part to address the problem of public drunkenness and to relieve the burden of police efforts with that population, the project has developed (with funding from the Robert Wood Johnson Foundation) into the most comprehensive program of its kind in the nation.

3) Foreign activities.—In 1982 the World Health Organization initiated a multiphase project to develop, disseminate, and sustain SBI in primary care worldwide. The first phase led to the development of the AUDIT screening instrument; the second phase tested the efficacy and cross-national generalizability of SBI in 10 countries.[12] The WHO Phase III project is currently ongoing, examining attitudes, practices, and incentives that influence primary health-care workers to conduct early interventions for risky alcohol use. It is also evaluating the feasibility of implementing such approaches. The project, operating in 15 countries, is examining strategies to increase the uptake of primary health care intervention programs in different countries.

In addition, a Primary Health Care version of the 10th revision of the International Classification of Diseases has been developed. Alcohol and drug problems are managed through SBI in the context of screening for mental disorders.

In Australia a telephone survey was commissioned under this project to review the use of SBI technology throughout the continent. Of the 444 Australian agencies who offer services to problem drinkers, 73% of those sampled report that brief intervention or "early" intervention is provided. Additionally, the National Health and Medical Research Council of Australia set guidelines for safe drinking, which are used by over 40% of the agencies surveyed.

In the United Kingdom SBI has been incorporated into the National Health Service since 1993 as a responsibility of almost all general medical practitioners. As part of a national health promotion effort, all general practitioners in the NHS are required to screen patients and provide appropriate interventions. In addition, brief intervention information is disseminated by two other national systems. The District and Regional Community Alcohol Teams (CATS) are community-based agencies that provide outreach and support services for professionals who come into contact with heavy drinkers. CATS can supplement, and sometimes replace, inpatient or outpatient treatment units. The Health Promotion Departments are regional organizations, staffed by health educators with qualifications in public health, and are an alternative method for distributing brief intervention information. Other U.K. programs include *Drinkwise*, an alcohol awareness campaign, *Helping People Change* (England), and *Drinking Responsibly and Moderately with Self-control (DRAMS)* (Scotland), which teaches medical professionals to help risky drinkers.

In Norway the National Alcohol and Drug Project is a three-year program for primary-care physicians, district nurses, and social workers with the aim of improving competence in screening and interventions for alcohol and drug problems.

In Canada there has been a significant investment in early intervention programs in several provinces, and at the national level. The Alcohol Risk Assessment and Intervention Project of the College of Family Physicians aims to provide family physicians with alcohol risk assessment and intervention skills. Launched in 1994, this project includes a manual and instructional materials disseminated nationally to all Canadian family physicians using a "train the trainers" model.

Economic considerations

The provision of costly medical services is now scrutinized carefully by many interested parties, most notably—though certainly not exclusively—by private and public third-party payers. Treatment of alcohol and drug problems has not escaped such cost-containment scrutiny. Providers of treatments that are not demonstrably cost-effective are finding it increasingly difficult to obtain reimbursement for such care in the evolving managed care environment. Such considerations have spurred the search for effective low-cost strategies to treat alcohol dependence and risky drinking.

There are several distinct, and not necessarily mutually exclusive, economic issues to consider in relation to implementing SBI for risky drinking in day-to-day practice. Costs must be estimated. While actual costs will vary from one setting to another, some key features of overall cost are likely to be prominent in most settings. These include direct costs of professional time and materials to administer the screen and intervention. A principal factor in determining the level of direct costs will be who administers the screen and intervention. While the time required for one case may be expected to be short, the volume and flow of cases will determine the economic efficiency (cost per case) of the service. Associated costs will be involved for training staff, establishing and maintaining support services, data collection, and increased referral to specialist treatment services.

The cost effectiveness of SBI may vary considerably, depending on how the technology is applied. If a program is aimed at a selected, high-risk portion of the population (eg, emergency room patients with injury, trauma, etc.), a higher rate of risky drinkers will be identified than in a "population approach" (eg, all members of an HMO), where a cross-section of the entire population is screened.[13] This issue will affect the rate at which people receive service and the economic efficiency of any such operation. The labor cost of personnel designated to screen and conduct brief intervention, and whether SBI is their sole function or is incorporated into other functions will affect cost effectiveness calculations. Additionally, the extent of the intervention—whether one five-minute session at the time of the screening, or multiple sessions of longer duration on different days—will significantly affect both treatment costs and costs incurred by patients.

One analysis has sought to estimate the benefits in short-term, acute medical problems related to violence, automobile crashes, other injuries, and illness—such as might be of direct interest to managed care providers. In this model a one-visit screening and intervention would yield an average benefit of $66 per year; a four-visit program would save $145. Assuming a physician provided the service at the cost per visit of $52 and that the patient/family remained on the managed care plan for two years after the initial visit, the program would return $2.50 for each dollar of cost on a single visit intervention or $1.40 for a multiple visit program.[14] If, as will surely be done in practical settings, the screening and intervention constituted a *part* of a physical examination or office visit, or were any portion of the service provided by a nurse or paraprofessional, the cost would be considerably less and the return on investment would be higher.

Markets Analysis

Four sectors were investigated for their potential as fertile ground for applications of this new approach to reducing risky drinking: health care, the workplace, human services, and higher education. The cultures, capacities, obstacles, and incentives particular to each sector yielded considerably different assessments about the potential to apply SBI. Due to space limitations only the health-care sector findings are described here, followed by the summary findings relevant to general dissemination.

Since severe alcohol dependence is treated as a disease and since alcohol abuse is associated with a wide range of diseases, disorders, and injury, health-care delivery settings are a logical site for applications of SBI. Indeed, this has been the most common setting for research and for applications in other countries. Our inquiry focused on three groups that might have important impact on the acceptance of this approach: general medical providers (with special emphasis on primary care, ob-gyn, and emergency department settings), substance abuse treatment providers; and HMOs and managed care organizations.

Medical providers' response to a broader range of services for risky drinkers was mixed. Those interviewed were no more knowledgeable than others about risky drinking. Many assumed that all risky drinkers, like stereotypical alcoholics, would deny having a problem and reject assistance. Some physicians said they were hesitant to ask patients about alcohol use for fear of driving them away. Additionally, many primary-care physicians see themselves as too busy to add new responsibilities to their current workload.

Ob-gyn and hospital emergency department practitioners were more open to identifying risky drinkers, perhaps because of broad knowledge of fetal effects in the former and the stark reality of alcohol harm in the latter. Even here, however, practitioners are even more positive if allied health or social work expertise would be brought in to provide the new service.

Driven by a challenging financial environment under managed care changes, substance abuse professionals saw in SBI the potential to reach a new market. Evidencing a deep personal concern for the alcoholic population, providers also envisaged a means to help stop some people from that destiny. Cautioning that special attention is required to assure alcoholics are not mistaken for risky drinkers, they, nevertheless, expressed interest in offering SBI as a *different* service to a *different* clientele.

Many focus group participants commented that SBI would be perfect for managed care, thinking rightly that early identification and low-cost management are consistent with preventive care as espoused by HMOs. In reality, however, not all managed-care organizations currently practice this theory. Some are seeking short-term profits through lower utilization of services achieved from rapid member growth, immediate service cost reductions, and reduced hospital access. Others—mainly older organizations with stable member bases, traditions of research, and those identifying costs related to alcohol—are already interested in exploring brief intervention. The potential exists in coming years, especially with companies seeking member retention, to provide preventive behavioral health services to achieve reductions in other costs.

The very fact that health-care providers were willing to participate in focus groups *without* any financial incentive indicates interest in the subject. The degree of interest and excitement on the part of participants exceeded common courtesy; there was a clear concern about the need to find new ways to address alcohol problems. Groups and individuals were asked whether alcohol was a significant issue in their work and what the nature of those issues might be. While there was great variety in the descriptions of how alcohol was a factor, there was unanimity that it was a major issue. Perhaps as a result of recent developments in the smoking field, many people distinguished between the

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problems experienced by persons who drink too much and the "second hand" effects of such drinking on other individuals and groups.

While all focus group participants had a high level of concern about alcohol problems, few initially had any concept of alcohol problems without dependence. Everyone had a working knowledge and vocabulary of "alcoholism," but there was no common concept or language for persons who experienced alcohol problems without dependence. Thus, there exists a conceptual barrier to understanding and using SBI: there is virtually no recognition of the primary target population—*non*alcoholic risky drinkers.

The reasons for this are complex, but three factors are suggested. First, like most stereotypes carrying stigma, popular attitudes toward alcoholism tend to be oversimplifications that characterize different behaviors in a uniform fashion. Second, the alcohol treatment industry has tended to define all alcohol problems as "*a* disease" of alcoholism in order to justify the need for treatment. Third, the theory of alcoholics being "in denial", ie, refusing to acknowledge their addiction, has allowed many professionals to explain the behavior of risky drinkers. Unfortunately, the corresponding theory that alcoholics in denial must "hit bottom" before they will seek help has led professionals to stop short of offering appropriate help to risky drinkers. This combination of attitudes has, in effect, communicated to risky drinkers that they must admit to being alcoholics (and accept its stigma) before any help will be offered.

The research on SBI has not rectified this situation because it is virtually unknown within the nonresearch professional community. Health professionals are cognizant of screening, but most know *only* about screening for alcoholics. Until recently, most research has been conducted outside the United States and published in journals of limited distribution and readership. Little attempt has been made to popularize findings in broader circulation publications, even those for specialized professionals. The result is that little knowledge has been transferred to the broader professional community, not to mention the American public.

Advancing widespread application will require that professionals and the public understand the full spectrum of alcohol misuse, including risky drinking. As formidable as it may sound, the prospect of changing widespread beliefs about alcohol use may not be an insurmountable barrier to moving forward. Nearly all the people to whom we explained risky, but nondependent, drinking grasped the concept immediately. Thus, although significant communications will be needed to re-educate professionals and the public about risky drinking, it is likely that such messages will fall on receptive ears. Certainly most professionals in focus groups and interviews were receptive and could quickly envisage how the new tools provided by SBI could be applied usefully in their work.

Having set out to explore the market for SBI, the investigation found the concept itself needed to be expanded and adapted to suit each sector. Instead of simply having two products—screening and intervention—four components or product groupings were identified to meet the intellectual and practical needs of professionals. To assure acceptance in the various markets, products must be developed in the following groups:

- *Preventive education.*—information about the nature of alcohol problems, and specifically about the nonalcoholic risky drinker;
- *Screening.*—instruments and procedures geared to specific populations and problems;
- *Brief intervention.*—alternative types of content, style, and intensity of counseling to suit different individuals and groups; and
- *Referral.*—objective, standardized guidelines (with rationales) for determining the type of specialized treatment appropriate for those needing more than a brief intervention, including best methods to encourage patients to accept treatment.

Services to people with alcohol problems in this country have often been provided in isolation of other health and social services. While it will mean somewhat different things in different sectors, efforts must be made in the process of advancing applications to improve service integration. Since screening for risk factors will identify a full spectrum of problems that cannot be addressed by the same service, programs must attend to the professional understanding and systemic relationships that will facilitate the provision of the proper service to each patient/customer. This means that the best program development will involve policy decisions, procedure development, and staff training—not just training alone. But unless SBI is included in the continuum of care and in the patient placement criteria, the goal of well integrated services will not become a reality.

The novelty of the concept, the complexity of service integration, and the need for multilevel decision-making in program design create challenges in developing applications. Customized products and effective training will be vital to assist most organizations that decide to incorporate SBI into their service. Organizations will need ready access to expert consultants and trainers to enable quality programs to be launched, measured, and maintained in reasonable time frames. Those experts must be experienced in the particular sector in which they work; thus the current stable of researchers and participants from existing programs will need to be expanded.

No leadership has been taken by any organization with visibility or power to stimulate widespread interest in applying SBI. The World Health Organization has taken on an international role in research and dissemination. NIAAA should be credited for supporting research in this country, but as a national research institute it is not well positioned to undertake applications in various sectors of American society.

In truth, no single organization in America has the capacity to do everything necessary to advance application of new intervention approaches to reducing alcohol harm. The task must be accomplished though alliances and collaboration. These allies, of necessity, must come from the sectors in which brief interventions are to be introduced. Ideally, they will be joined by those in research and current programs in the U.S. and, perhaps, other countries. The response of individuals representing such organizations in this investigation suggests a willingness to participate. This interest is grounded in a variety of self-interests in new and improved ways to reduce alcohol-related harm.

The private sector is best positioned to lead this movement, in partnership with state and federal government. It is in the private sector—and in public services now being privatized—that this new approach must be applied. Additionally, in the political climate of the 1990s, it is important that leadership *not* be perceived as a mandate from public agencies.

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Discussion

While more research is not required to begin widespread dissemination of SBI, many aspects of such dissemination will benefit from additional research and evaluation. The ongoing corpus of clinical trials and program evaluation studies continues to generate valuable research findings about the efficacy, effectiveness, costs, benefits, and mechanisms of action of brief interventions. The findings of these studies should be tracked and applied on an on-going basis to the task of advancing application of SBI.

Most obstacles to applications are typical of innovations. Financial incentives, competition for time, and acceptance of novel procedures must be addressed in the process of dissemination. The level of discomfort many health professionals have in discussing alcohol issues is a special consideration. Clearly, high quality specialized training customized to specific professionals in particular settings will be needed.

Perhaps most importantly regarding research, there is a scientific basis for early identification and management of alcohol problems through SBI. While interest continues to expand in some areas of brief intervention research, most researchers believe the time has come to move their technologies into practice. This indicates a level of confidence researchers have in their own work and the research of others. Moreover, researchers have had sufficient experience in practical settings to inspire confidence that widespread application is possible and would be useful.

While it may be unfortunate that several other countries are ahead of the U.S.A. in applying SBI research, such program activities not only set goals for the United States to emulate, they also provide practical assistance in implementing SBI. Educational materials for use with problem drinkers have been developed by most of the countries mentioned above. Manuals, pamphlets, and books have been written to help train professionals in the process of SBI. Our international observers described a wide variety of screening tools, demonstration programs, system-wide initiatives, and research accomplishments. This experience could contribute to the task of providing products and technical assistance to programs and professionals in the United States.

The findings from the clinical trials on SBI are encouraging in regard to the effectiveness issue. The clinical evidence suggests that a significant proportion of risky drinkers respond to brief interventions and that resulting reductions in drinking may average about 20%. Even if only a relatively small percentage of the large population of risky drinkers received such interventions, the potential benefits to society are likely to be considerable given the success rates demonstrated in clinical trials.

Determination of the costs and benefits of SBI requires additional study. While clinical trials have shown effectiveness in reducing drinking, the exact relationship between SBI's reductions in alcohol consumption and changes in morbidity, mortality, and social costs needs further empirical study at both the individual and population levels. A series of cost-benefit studies is needed to assess the hypothesis that low-cost interventions to reduce consumption will result in reduced disease and related costs. These studies must take into account the time period over which benefits are achieved and who receives the benefit.

Three overarching needs should inform action to disseminate SBI research. First, more must be learned about SBI in practical settings. Will professionals and consumers grasp the concept of risky drinking? Will professionals, provider organizations, and consumers accept this new service? How can a new preventive education message best be communicated? What products and services are necessary, and how can they best be designed to support service delivery? What will be the economic costs and benefits of this approach in various settings? A host of such questions remain to be considered, and the answers must be effectively disseminated. This need can be met by a coordinated program of demonstrations.

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Ward Dining Hall, Center Building at The Hartford Retreat, 1915. (Photo on exhibit at The Institute of Living.)

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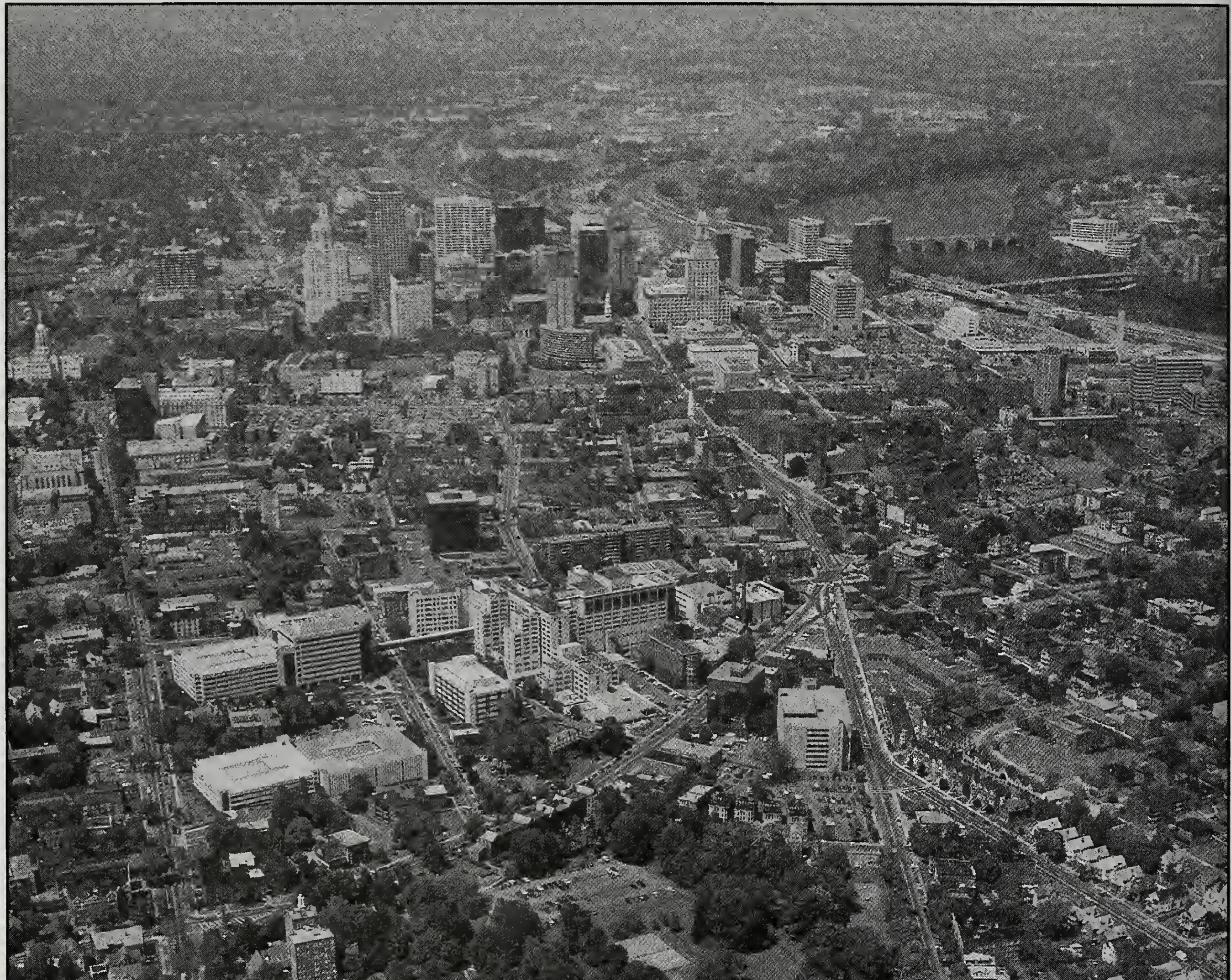

The Institute of Living at the time of integration with Hartford Hospital (1994), with Hartford Hospital, the City of Hartford, and the Connecticut River beyond. Photographer Al Ferreira.

Alcohol and Drug Abuse Among Connecticut Youth: Implications for Adolescent Medicine and Public Health

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ABSTRACT—In 1995, a statewide survey of alcohol and other drug use was conducted in a random sample of approximately 4,000 7th to 12th graders in public schools in Connecticut. The survey, part of a statewide substance abuse treatment needs assessment, showed that use of tobacco, alcohol, and marijuana was widespread and increasing, particularly among younger students. Connecticut's students reported higher rates of substance use compared to their peers nationwide. Substance use differed according to age, gender, ethnic background, and community type. It was estimated that almost 1-in-10 senior high school students should receive a diagnostic evaluation for substance abuse, with half likely to need a treatment referral. Most of these adolescents had not received treatment for their substance abuse. Primary-care physicians can play a key role in reducing adolescent substance abuse through prevention messages, screening for drug use, brief interventions, and timely referrals to appropriate intervention services.

Abbreviations Used in Test

AADUSS = Adolescent Alcohol and Drug Use School Survey
PESQ = Personal Experiences Screen Questionnaire

Introduction

THE use of psychoactive substances, such as alcohol, tobacco, and other drugs, has been a major defining feature of adolescent development since the late 1960s. Throughout the 1980s it appeared that proportionately fewer adolescents were using drugs. But in recent years national data have shown a disturbing reversal, with a trend toward increased drug use among youth in the United States.[1] This trend is a cause for concern given the significant health and social consequences of adolescent substance use.

As drug use becomes more prevalent in the adolescent population, individuals vulnerable to substance abuse are at increased risk.[2] But drug abuse is not the only health problem facing adolescents. Several of the leading causes of death among adolescents and young adults have been associated with substance use, including unintentional injury, homicide, suicide, and human immunodeficiency virus infection. Together these causes accounted for more than 27,000 premature deaths among young people aged 15 to 24 nationwide in 1992.[3]

As one of the state agencies responsible for program and policy development in the area of substance abuse, the Connecticut Department of Mental Health and Addiction Services has recognized the need for reliable, standardized information to minimize the consequences of substance abuse by adolescents. To address this need, DMHAS contracted with the University of Connecticut Health Center to conduct a statewide school survey of adolescent drug use.

The specific objectives of the Adolescent Alcohol and Drug Use School Survey (AADUSS) were:

- To estimate the prevalence of alcohol and other drug use in the Connecticut school population;

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- To study trends in incidence and prevalence based on the previous school survey (1989);
- To examine the causes, correlates, and problems related to substance use in the student population, especially among high-risk adolescents; and
- To assist state planning of prevention and treatment programs by estimating the need for alcohol and other substance abuse services.

The purpose of this article is to describe the results of this survey in the context of the health needs of the adolescent school population. To the extent that pediatricians and family doctors are in a key position to detect the signs and symptoms of substance abuse, this article also explores the important role that primary-care physicians can play in the prevention, identification, and management of substance use disorders among adolescents.

Methodology

The survey respondents were sampled from the population of 7th through 12th graders enrolled in public schools in Connecticut in the Spring of 1995. A multistage sampling procedure was used to assure proportional representation in terms of town and grade level. In the first stage of sampling, a statewide sample of school districts stratified geographically and by community type was chosen. Fifty-three percent of the sampled districts agreed to participate. In the next stage, classes required of all students stratified by grade were randomly sampled within participating schools. The total number of students participating in the statewide survey was 3,995.

Students were asked to complete the self-administered questionnaires during a single regularly scheduled class session. Participation was voluntary, and numerous precautions were taken to protect anonymity and confidentiality. Students were instructed not to put any personal identifying information on the forms.

Sample characteristics were compared with the population of students enrolled in Connecticut during the 1994–95 school year to determine how closely the sample represented the demographic composition of the state. Slight shortfalls in sampling were corrected through statistical weighting, and all analyses were conducted on the weighted sample. The demographics of the weighted sample reflect the characteristics of Connecticut's total student population.

The survey was modeled after similar instruments used in previous state and national studies.[1,4–6] The self-administered questionnaire measured the following domains: demographic characteristics, the use of alcohol, tobacco, illicit and prescription drugs, occasions of use, reasons for use, reasons for not using, perceptions of harm from substance use, problems associated with substance use, adjustment and school problems, attitudes about alcohol and other drugs, need for treatment services, perceptions of prevention and intervention programs, and perceived sources of help.

Data analysis first focused on lifetime and current substance use among junior and senior high school students statewide. *Lifetime use* counts those who report they have ever used a substance at least once. *Recent* or *current use* is defined as reported use of any substance in the last 30 days. The rates of use were compared to the previous 1989 statewide school survey data to identify trends in substance use. Comparisons were also made to national data on student substance use as reported by the Monitoring the Future Study.[1] Group differences in substance use were examined by grade level, gender, racial/ethnic background, and community type.

Subsequent analyses examined the attitudes and behaviors surrounding alcohol and other drug use. The reasons for using or not using alcohol and other drugs, the frequency of use, and substance-related problem behaviors were investigated. Particular attention was paid to *regular use*, defined as use of a substance six or more times in the past month, as a possible indication of more serious involvement with psychoactive drugs.

Evaluation of treatment needs was based on measures of self-perceived need for treatment and reports of symptomatic behavior. In addition, the Personal Experiences Screen Questionnaire (PESQ) was used to determine how many adolescents may require further assessment for substance abuse. The PESQ's Problem Severity Scale identifies those students who need professional diagnostic evaluation. These youth report behaviors that are characteristic of problematic substance use. It also differentiates those youth who are likely to require treatment services. The PESQ has been shown in previous research to correlate highly with formal diagnostic instruments.[7] Reported use of treatment services was tabulated to determine what proportion of the student population identified to be in need of treatment have actually received help for their substance abuse.

The margin of error is always a concern in survey research, and the figures presented in this report can be expected to vary slightly. However, the impact of such error is likely to be minimal in these data. The margin of error is estimated to vary between 2% to 6%. At the upper end, estimates of 50% might actually be in the range of 47% to 53%. Smaller estimates are subject to less uncertainty, so that estimates of 5% can be expected to actually be between 4% to 6%.

Findings

Prevalence of substance use.—As the data in Table 1 show, use of psychoactive substances is widely prevalent among Connecticut's adolescent school population. The three "gateway drugs"—alcohol, tobacco, and marijuana—

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Table 1—Lifetime and Recent Substance Use by Sex: Grades 7–8 and Grades 9–12

Grades 7 - 8

		Lifetime Use		Recent Use	
Substance		**Males**	**Females**	**Males**	**Females**
Tobacco:	Cigarettes	44.7%	44.9%	20.2%	24.7%
	Smokeless	12.8	3.5	4.4	2.2
Alcohol		56.2	52.9	33.3	32.4
Marijuana		17.7	15.5	10.8	11.3
Cocaine		1.3	1.3	0.6	0.6
Crack		0.9	0.7	0.0	0.5
Hallucinogens		2.7	2.7	0.9	1.6
Angel Dust		1.7	1.0	0.4	0.5
Inhalants		10.8	12.0	5.0	7.5
Heroin		0.7	0.7	0.3	0.1
Downers		4.0	8.1	2.6	5.5
Tranquilizers		0.8	1.3	0.4	0.8
Uppers		2.4	4.8	1.4	3.4
Steroids		1.8	0.6	1.1	0.1
Pain Medicines		7.2	11.9	3.8	8.0

Grades 9 - 12

		Lifetime Use		Recent Use	
Substance		**Males**	**Females**	**Males**	**Females**
Tobacco:	Cigarettes	56.8%	57.7%	30.6%	29.0%
	Smokeless	21.9	6.1	11.3	1.6
Alcohol		77.3	74.7	53.3	47.9
Marijuana		42.4	35.7	31.0	22.7
Cocaine		3.8	2.7	1.4	0.7
Crack		2.4	1.7	0.6	0.3
Hallucinogens		10.7	6.2	4.2	2.8
Angel Dust		2.0	1.7	0.7	0.6
Inhalants		15.3	9.9	5.0	3.1
Heroin		1.8	0.7	1.1	0.2
Downers		6.3	11.4	2.8	6.3
Tranquilizers		3.4	2.6	1.4	1.3
Uppers		6.5	8.4	2.6	5.0
Steroids		1.3	0.6	0.9	0.3
Pain Medicines		12.4	13.9	5.8	8.1

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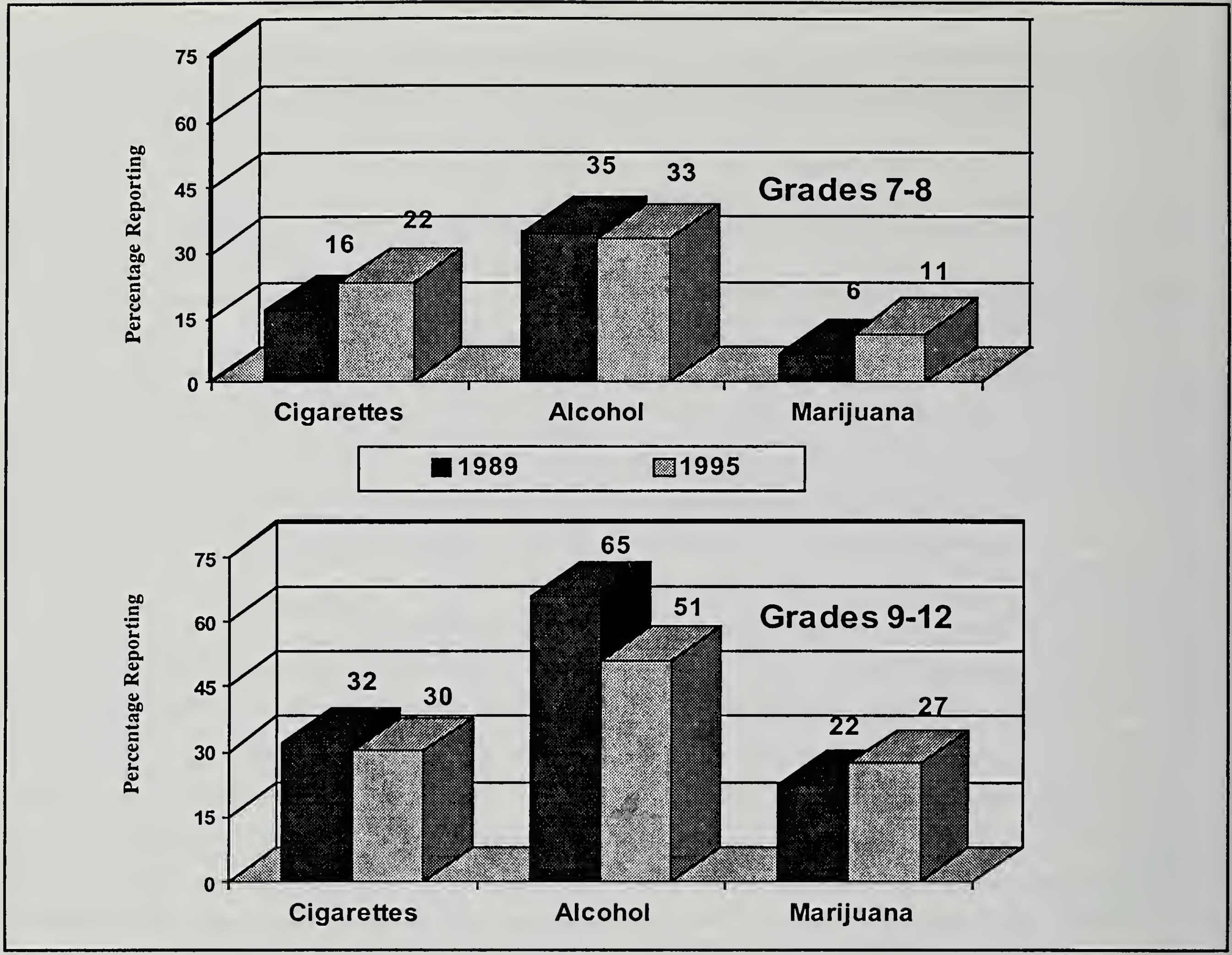
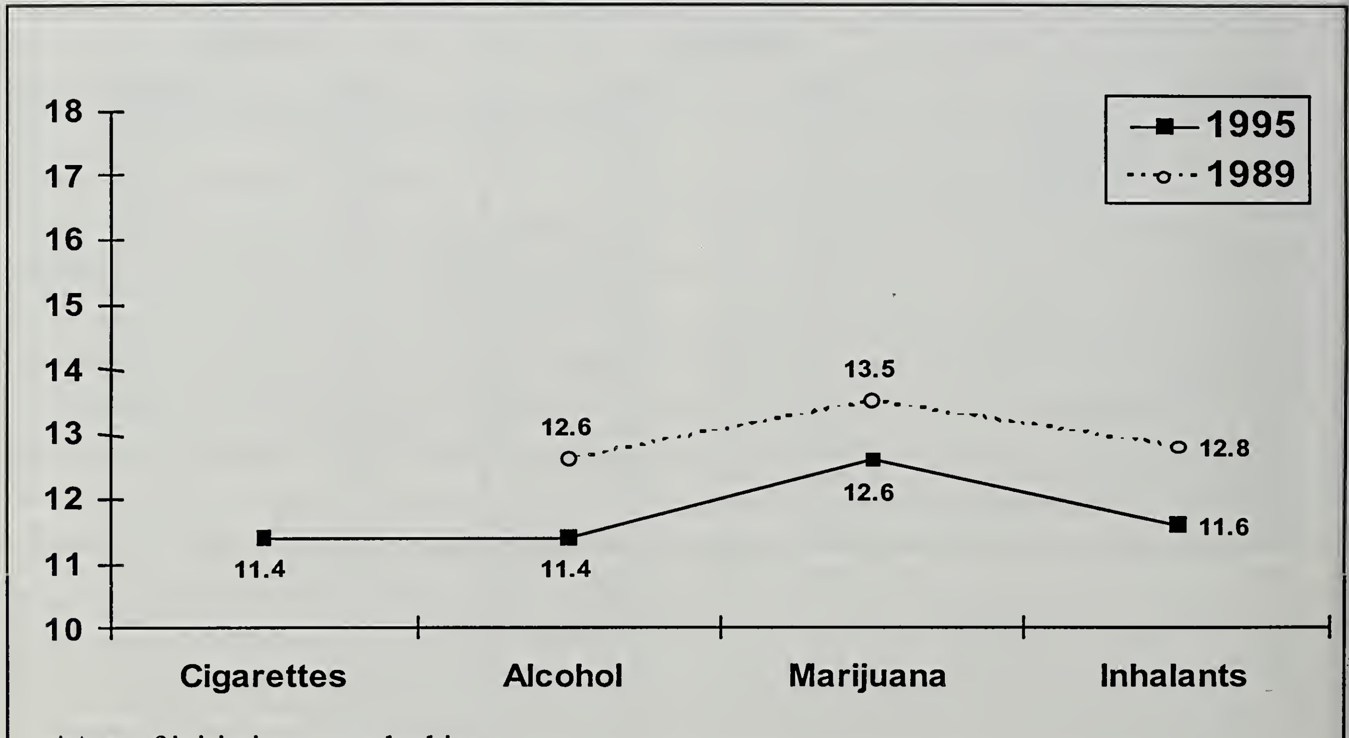


Figure 1.—Trends in recent use of cigarettes, alcohol, and marijuana.



*Age of initiation not asked in

Figure 2.—Age of initiation among users of cigarettes,* alcohol, marijuana, and inhalants, 1989 and 1995—Grade 8.

are the most popular substances among all grade levels, with the use of other substances relatively low. More than half of students in junior high and three-fourths of senior high students reported lifetime alcohol use. Recent use of alcohol increased sharply from junior high school to high school; approximately 33% of 7th and 8th graders were current drinkers, whereas 53% of high school boys and 48% of high school girls reported drinking in the last 30 days. One-in-five boys and one-in-four girls in junior high school were current cigarette smokers; by high school almost one-in-three students admitted they were current smokers. The rate of marijuana use increased two- to three-fold from junior high to senior high school. Eleven percent of boys and girls in the 7th and 8th grades reported that they had smoked marijuana in the 30 days prior to the survey; at the senior high school level 31% of boys and 23% of girls were recent marijuana users.

Certain other drugs, although used by minorities of students, were reported with enough frequency to warrant concern. More than 10% of the junior high school students had ever used inhalants and more than 5% reported current use. Girls in junior and senior high school reported misuse of "downers" (barbiturates), "uppers" (stimulants), and pain medications.

Trends over time.—A comparison of current substance use prevalence rates in 1989 and 1995 revealed that there were different cohort effects occurring between junior high and senior high school. Figure 1 shows that among 7th and 8th graders there were noticeable increases in current use of cigarettes and marijuana. Cigarette smoking rose 5% on average (4% among boys and 8% points among girls). Marijuana use also increased approximately five percentage points among 7th and 8th graders, mirroring the increase in cigarette smoking. Recent use of inhalants and downers almost doubled during the six-year period (data not shown). Use of other drugs, including alcohol, remained relatively constant.

Among 9th to 12th graders a different picture emerged. With few exceptions, the rates of substance use overall decreased among older students. Especially noteworthy was a drop in recent alcohol use, from 66% in 1989 to 53% in 1995 among males and from 65% to 48% among females. However, with one in every two high school students reporting current use, alcohol remained the most widely used substance. There was an increase in marijuana use, particularly among males whose use increased 7% (from 24% in 1989 to 31% in 1995).

The data in Fig. 2 further illustrate this trend in substance use prevalence among junior high students. Student users in 8th grade in 1995 reported initiating alcohol, marijuana, and inhalants use one year earlier than their 1989 peers.

A comparison of the regular use (eg, six or more times in the past 30 days) of cigarettes, alcohol, and marijuana in 1989 and 1995 is shown in Table 2. The trends over time show that regular use of all substances increased for junior high school students. For high school students tobacco was used on a regular basis more than any other drug; in 1995 almost one-in-five high school students said they smoked cigarettes on a regular basis. Regular tobacco use increased slightly for males but decreased substantially for females. Male high school students likewise showed an increase in regular use of marijuana. Regular alcohol use, however, declined for both males and females.

Comparisons with National Data.—The prevalence rates of the 1995 AADUS Survey were compared with national data from the 1995 Monitoring the Future Study, which is based on representative samples of 8th, 10th, and 12th graders throughout the country.[1] In all comparisons the rates of substance use in Connecticut exceeded national figures. For instance, approximately 8% more 8th graders in Connecticut were current cigarette smokers compared to their peers nationwide (27% *vs* 19%). Ten percent to 14% more of Connecticut's teenagers across the grade levels were drinking currently than were students nationwide. The same pattern of higher levels of use in Connecticut was found for marijuana across all grade levels. Specifically, 14% of 8th graders in Connecticut used marijuana as opposed to only 9% nationally, and 29% of 10th graders in Connecticut used marijuana in comparison to 17% of the nation's sophomores. Finally, Connecticut's seniors reported nearly one-third more marijuana use than seniors nationwide (32% *vs* 21%).

Demographic Patterns.—Patterns of substance use differed according to age, gender, racial/ethnic background, and community type. The differences by gender and age are evident in the data presented above. The rates of drug use were comparable among boys and girls in junior high

Table 2.—Regular Use of Cigarettes, Alcohol, and Marijuana by Sex, Grade Level, and Year of Survey

Grades 7–8					**Grades 9–12**				
	Males		**Females**			**Males**		**Females**	
Substance	**1989**	**1995**	**1989**	**1995**	**Substance**	**1989**	**1995**	**1989**	**1995**
Cigarettes	7.4%	7.9%	6.8%	8.9%	Cigarettes	17.8%	19.5%	22.5%	17.6%
Alcohol	4.8	5.2	3.8	4.2	Alcohol	20.6	15.7	14.4	8.1
Marijuana	2.0	3.1	1.1	2.5	Marijuana	10.7	14.4	7.0	7.7

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school; only at the senior high school level did boys have higher rates of use overall. Drug use typically increases progressively with grade level.

There were important ethnic differences evident in the rates of substance use (data not shown). Except for lifetime use of alcohol and marijuana, which were relatively comparable across each of the groups, black students consistently reported lower rates of both lifetime and current use of substances than either their white or Hispanic peers. Among specific drug categories, white students were more likely to be current drinkers than their black and Hispanic counterparts (46% compared to 40% and 41% respectively). Hispanic students were the most likely to report use of illicit drugs; they had the highest rates of current use of marijuana, cocaine, hallucinogens, angel dust, downers, and pain medications. Analyses of the racial/ethnic differences between junior high school and senior high school showed that these variations between groups were most pronounced in the upper grade levels.

A comparison was made of students surveyed in Connecticut's major cities such as Hartford, Bridgeport, and New Haven, with all other communities, referred to collectively as "suburban." In general, the data showed that suburban students reported higher rates of substance use than urban students in school. The patterns of use by community-type varied across the grade levels; generally there were few differences in the prevalence of substance use among junior high school students, but by the upper grade levels there were wide differences. For instance, the rates of alcohol and marijuana use were comparable among younger students regardless of type of community. But thereafter the rate of alcohol and marijuana use increased almost linearly for suburban students with each grade level while remaining relatively constant for urban students over the high school years.

Attitudes towards alcohol and other drug use.—When asked why they used alcohol, adolescents most often cited "liking the taste" and "to have a good time." Students also said they drank alcohol "to feel good" and "to feel less tense." Intoxication was an end in itself for one-in-two high school boys who drank. Girls were more likely than boys to report that they drank "to forget problems" or "to cheer themselves up," reasons cited by one-third of high school girls.

Students likewise were motivated to use other drugs to relax, get high, have a good time, and to feel good. Curiosity is also an important factor in adolescent drug use; approximately half of all students reported that they had used drugs "to see what it was like."

Concern about health is the number one reason all students cited for not drinking or using drugs. Approximately nine-in-10 students who were nondrinkers or nonusers of drugs said they were concerned about the health risks. Worry about becoming an alcoholic and concern about drug dependency were among the other most frequently cited reasons for not using alcohol and other drugs.

In general, students view the regular use of any substance (cigarettes, alcohol, marijuana, or cocaine) as more hazardous than occasional use. But, while drinking to intoxication regularly was considered harmful by most students, 24% of junior high school and 41% of senior high school students felt drinking to intoxication "once or twice" had few harmful consequences. There was considerable tolerance of casual marijuana use; 36% of 7th and 8th graders and 54% of 9th through 12th graders felt there was little or no harm in occasional marijuana use. It is noteworthy that approximately one-tenth of the junior high students did not know whether regular use of cigarettes, marijuana, or cocaine was harmful or not.

Problems and risks related to substance use.—Risk behaviors and problematic consequences associated with alcohol and other drug use were widely reported, especially among students who were regular substance users. In particular, drinking (or drug use) and driving behaviors were common. One fifth of senior high school students reported that they had driven a car after using psychoactive substances; more than half of regular substance users had done so. Forty percent of senior high school and 24% of junior high students said they had been a passenger in a car when the driver had been drinking or using drugs. Almost one-in-five (17%) students in high school report that they have attended class drunk or high from drug use at least once; 63% of regular users had been high in school. Regular substance users reported problems such as school suspensions, failing grades, theft, carrying weapons, and suicide attempts at rates two to three times that of students overall. Forty percent of students who were regular substance users admitted to serious suicidal ideation.

Treatment need.—According to the PESQ screening test, almost one-in-ten (9%) senior high school students gave evidence of sufficient involvement with drugs and alcohol to warrant a more detailed diagnostic evaluation. Approximately 6% of 9th through 12th graders statewide were found to be likely candidates for some form of substance abuse treatment intervention, which could range from brief counseling in school or by a health-care provider to more intensive treatment. Four percent of junior high students also could benefit from further evaluation for substance abuse treatment, a finding that suggests that prevention efforts need to be intensified in this younger population.

When these percentages were applied to the total state student enrollment figures for the 1994–1995 school year, it was estimated that a total of 14,118 junior high and senior high school students in Connecticut were eligible for a substance abuse treatment evaluation. Of those, 8,044 (1,343 7th to 8th graders and 6,701 9th to 12th graders) were likely to need a treatment intervention.

There were no gender differences in projected treatment need despite the fact that boys in high school were more likely to use most drugs and also that males predominate in the substance abuse treatment population, at least among adults. The rates of projected treatment need did vary according to racial/ethnic background. Consistent with their lower reported rates of substance use, black students were least likely to meet PESQ criteria. Only four percent of black students were flagged by the PESQ for a substance abuse evaluation compared to 8% of white students. Hispanic students displayed the most need for intervention (11%).

Despite the fact that many students flagged by the PESQ reported trying unsuccessfully to cut down or stop using alcohol or other drugs, most did not recognize that they might need help with their substance problem. Twenty-two percent of PESQ-identified students admitted they needed help, counseling, or treatment. Of those students estimated to need a treatment intervention, only 31% said they had received professional help, including therapy or counseling.

Discussion

The findings from the 1995 Adolescent Alcohol and Drug Use Student Survey document the pervasive use of licit and illicit substances, particularly alcohol, tobacco, and marijuana, in Connecticut's secondary school population. In general, the rates of student drug use in Connecticut are higher than reported nationally. Consistent with national trends in student drug use, there have been increases in the use of a number of drugs over the past several years, especially among junior high school students. Regular use of cigarettes and alcohol has increased among 7th and 8th graders, and regular use of marijuana has increased at both the junior and senior high school levels. Further, the evidence shows that the "gateway" drugs are being initiated by junior high school students at earlier ages. The trends observed among the younger students portend further increases in student drug use over the next few years.

Information from the AADUS Survey can be used to inform prevention and intervention efforts. For instance, differences in use patterns and factors related to substance use at different ages suggest that developmentally appropriate substance abuse prevention strategies should be used. Drug abuse prevention programs implemented during junior high school years can produce meaningful and durable reductions in tobacco, alcohol, and marijuana use if they teach a combination of social resistance skills and general life skills, and include at least two years of booster sessions.[8]

Large percentages of students in the state either do not view occasional use of tobacco, alcohol, and marijuana as harmful or do not know if such use can be harmful. Data from the Monitoring the Future Study[1] show that increases in substance use are accompanied by decreases in the perceived harm of tobacco, alcohol, and other drugs. Although statewide data were not available, trend data from the Eastern Fairfield County regional student surveys[6] did reveal a reduction in the perceived harm of marijuana use among students during this same period. Despite accumulating evidence and publicity about the harmful effects of smoking products, adolescents in Connecticut appear to be less concerned about the health consequences of tobacco use. Efforts to reduce substance use in this population will have to address issues of perceived harmfulness of substances.

Health and well-being appear to be among the major underlying reasons adolescents give for using or not using alcohol and other drugs. Those who use substances do so to "feel good" or to "feel less tense;" those who do not report alcohol or other drug use are motivated to abstain to maintain their health. For example, reasons for not using drugs are primarily related to "concerns about health" and fear of becoming an "addict." These findings support approaches that promote health and healthy life choices as a conceptual framework for substance abuse prevention efforts.

Student concerns about the impact of substance use on their health also point to the important role primary- care practitioners can play in the prevention and reduction of adolescent substance abuse. Family doctors and pediatricians are a critical resource for substance use prevention and screening efforts. Including substance abuse education and evaluation as routine in medical checkups of adolescents would greatly enhance the rate of early identification, as well as reinforce the negative health implications of substance use. Although several self-report screening tests have been developed,[7, 9] denial can reduce the accuracy of these tests. Urine screening procedures are a more useful way to detect recent drug use, and random urine samples collected under parental supervision can have an important deterrent effect.

A significant proportion of the high school population give evidence of sufficient involvement with drugs and alcohol to warrant a more detailed diagnostic evaluation for substance abuse. Based on the PESQ, the assessment instrument used in this study, we estimate that approximately 14,000 adolescents in the public schools would be candidates for some form of substance abuse intervention. At the senior high school level, this means that almost one out of every 10 students should be evaluated for substance abuse. Based on the PESQ criteria and previous experience with screening and clinical assessment of youth in Connecticut,[10] at least half of the students in need of a diagnostic evaluation are likely to require a treatment referral. The intervention could range from brief counseling in school or during a medical visit to more intensive treatment in a residential program. Screening and brief advice from primary-care physicians has proven effective in decreasing alcohol misuse among adults.[11]

Only one third of those students identified to be in need of a substance abuse evaluation report that they have received professional help for their alcohol or drug abuse, including therapy and counseling. Given that adolescents tend to underreport services they have received compared to their parents' reports,[12] we would conservatively estimate that no more than half of the adolescents in need of substance abuse services have received appropriate treatment. This unmet need for substance abuse treatment can be addressed through earlier identification with appropriate and timely referral to intervention services.

To coordinate better the prevention and treatment efforts, there is a need to create a continuum of services that includes: screening and early identification at the primary care level and in the schools; standardized diagnostic assessment; treatment planning; referral guidelines; and an appropriate range of services. One of the most promising approaches to adolescent treatment services is one recommended by the Institute of Medicine (IOM) expert committee report, *Broadening the Base of Treatment for Alcohol Problems.*[13] The IOM report describes a hypothetical treatment service system that includes the early identification of alcohol and other substance abuse through a variety of cooperating community agencies. Cases found to have alcohol and other substance abuse problems are referred for a more systematic evaluation based on an objective, sequential assessment procedure. The final ingredient of the IOM model is the referral of clients to appropriate services by means of rational, scientifically-based treatment matching guidelines.

As conceived by the IOM Committee, identification, assessment, and referral should be organized within independent assessment and case management agencies that have no financial, professional, or ideological interest in a particular form of treatment. Such a system could be modeled after the Youth Evaluation Services demonstration program tested in southwestern Connecticut[10] and recommended by the IOM. Through the establishment of independent, regional assessment, and case management centers, the schools, the courts, and parents could address the substance abuse treatment needs of the adolescent population in a more systematic manner.

Certain caveats should be taken into account in the interpretation of the survey findings. The major concern in all surveys is that the data be valid, reliable, and representative.[14] Attainment of these objectives is often difficult. First, surveys used to measure sensitive, illegal, or stigmatizing behaviors are often characterized by underreporting. This is so because when self-report is used to collect sensitive information there is a tendency for respondents to minimize deviant behavior and to present what they think is "normal." Research shows that reports of drug use by adolescents are generally reliable and valid when anonymous questionnaires are used.[15] However, to the extent that some underreporting in drug use surveys is likely,[16] the rates of use and abuse reported in this study, especially of the illicit drugs, may be conservative estimates of the prevalence of substance use.

Another important consideration in the interpretation of these findings is the representativeness of the sample. The population from which the sample was drawn was limited to those youth who were attending school and were available to be surveyed. Data from the Connecticut State Department of Education[17] show that significant proportions of school-aged youth drop out of school at early ages, especially minority youth from urban centers. The extent of substance use by these youth is not captured by a survey of school students and the data should not be generalized to out-of-school adolescents. The higher level of risk factors for urban minority youth make it more likely for these students to develop substance abuse problems and drop out of school before graduation. The differences in prevalence rates according to urbanicity and ethnicity may be related to differential dropout rates.

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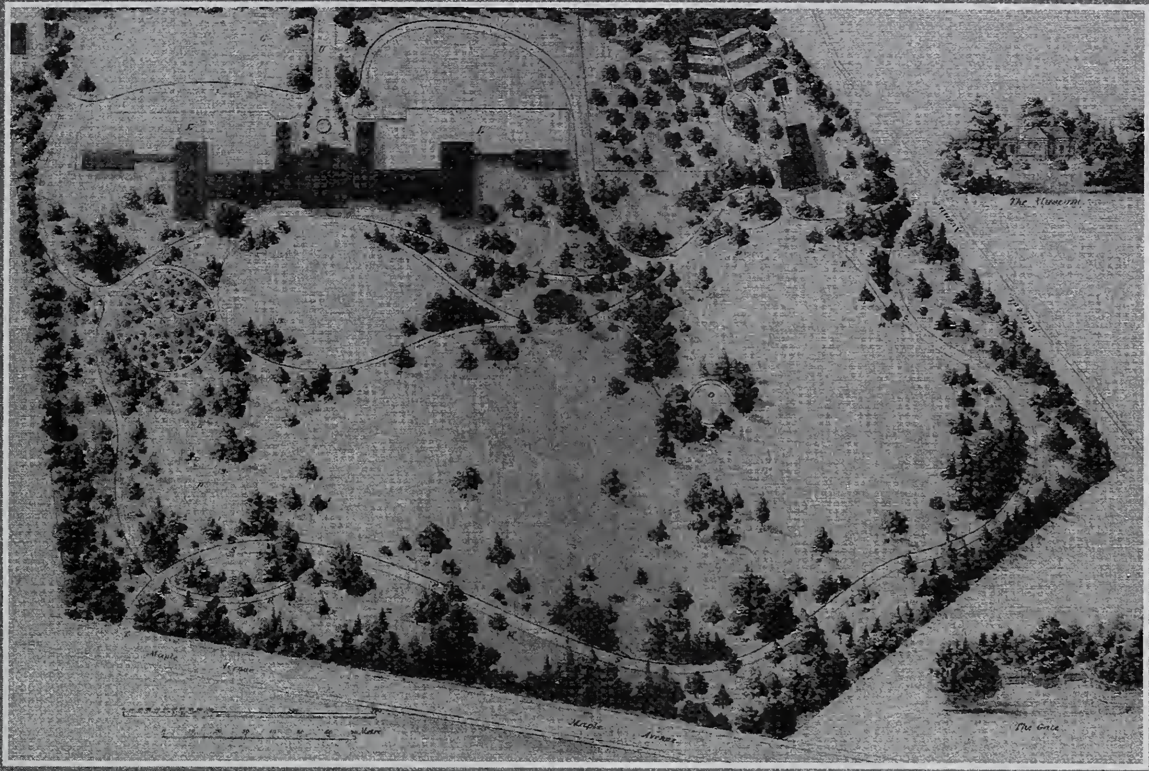

RETREAT PARK

Not long after its founding as an outpost of moral treatment, The Institute (then known as "The Retreat") engaged Frederick Law Olmsted, the noted landscape architect who designed Central Park and other well-known American parks and estates, to improve its grounds. In 1861, Olmsted's firm submitted this plan to Superintendent John Butler, M.D., and the installation of drives and walks, the draining of some of the 39 acres, and the thinning of existing trees and the planting of new ones began. "Retreat Park" was opened to the public in 1863. It was reported that "from whatever points of the drives or walks the grounds are viewed, the effect upon the eye now is harmonious and striking."

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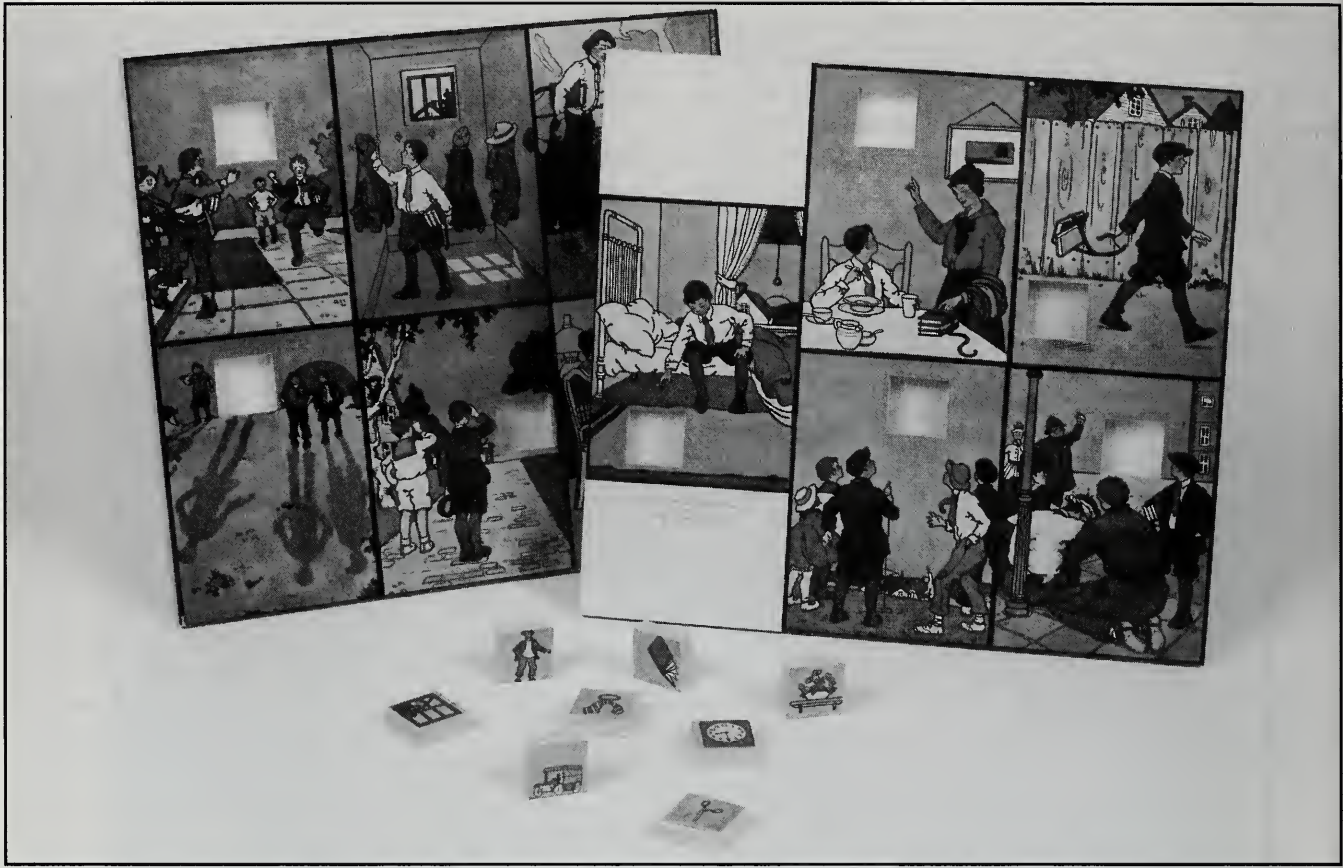
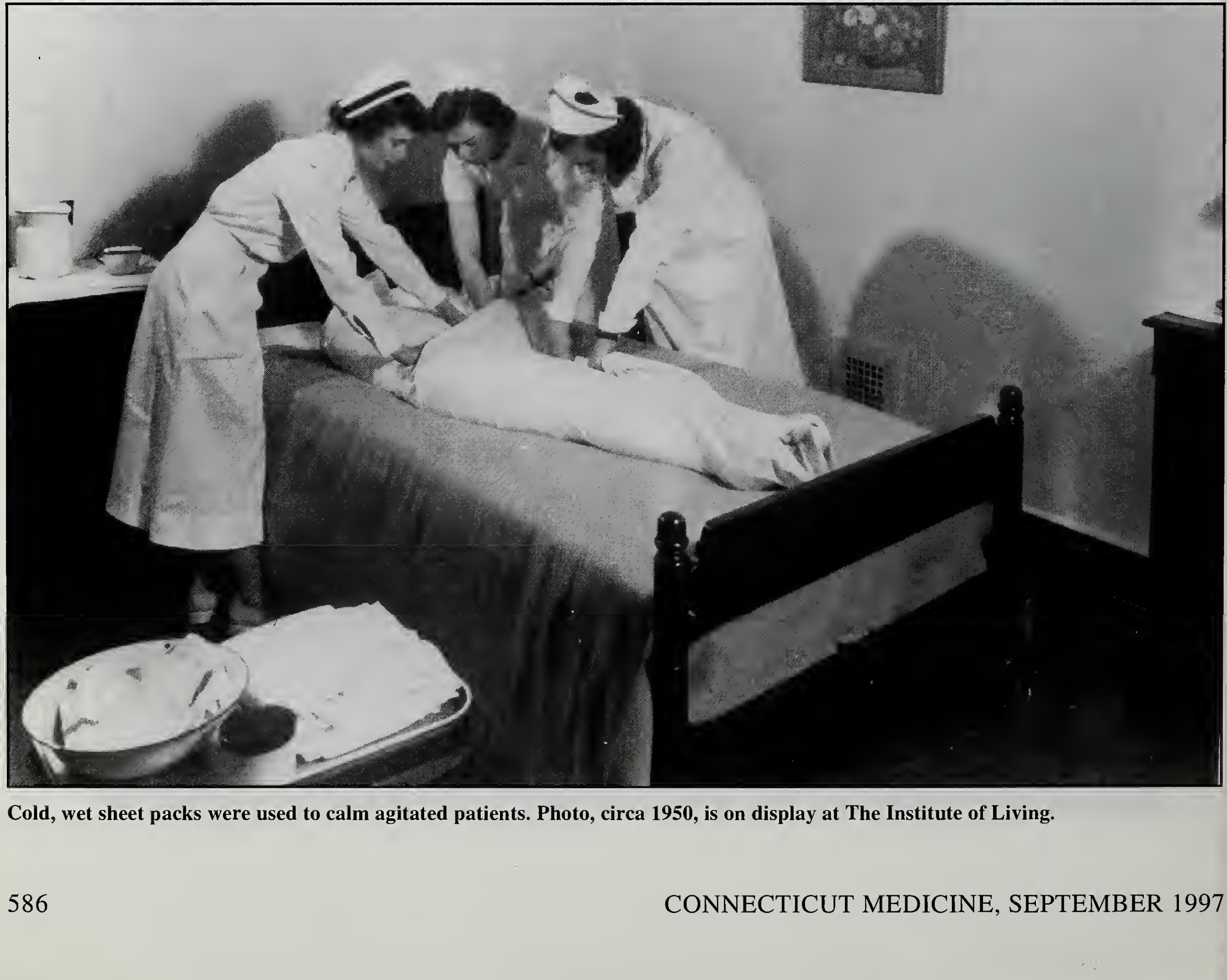


Intelligence assessment puzzle, 1918. Tests like this puzzle, which assessed cognitive development and logic, helped determine a patient's condition upon entering the Retreat. On exhibit at The Institute of Living.



Cold, wet sheet packs were used to calm agitated patients. Photo, circa 1950, is on display at The Institute of Living.

New Directions in Clinical Psychopharmacology

ALEX A. CARDONI, M.S., PHARM.D

ABSTRACT—This paper reviews the current clinical use of psychotropic drugs and suggests new directions for future drug development. The author reviews the contemporary pharmacotherapy of depression, anxiety disorders, schizophrenia, and bipolar disorder and summarizes current trends in the drug treatment of psychiatric aspects of HIV disease. The increasing use of combination pharmacotherapy is discussed, as well as the impact of pharmacokinetics in clinical psychopharmacology. The use of botanical products for psychiatric disorders and tobacco use in the psychiatric patient are also addressed. Current research is producing drugs that have greater specificity in their mechanism of action effecting faster clinical response with minimum adverse effects.

Introduction

ON 26 March 1990, for the first time in the memory of this author, a drug product was featured on the cover of a national news magazine.[1] The *Newsweek* cover story, "Prozac. A Breakthrough Drug for Depression," appeared just two years after the marketing of the drug in March 1988, a vivid testimony to the extensive use, popularity, and effectiveness of this medication. There rapidly followed two popular books, *Listening to Prozac*[2] and *Talking Back to Prozac*,[3] and a second cover-story article in *Newsweek* on 7 February 1994.[4] This national attention quickly spread to radio, televison, and the Internet, all of it signaling a renewed interest in and an awareness of psychoactive drugs, especially by the public-at-large. This interest encompasses legitimate prescription medications, nonprescription drugs (OTCs), alternative medicines, and recreational drugs. In this article, I will review the latest trends and developments in the clinical use of psychotropic drugs that are of interest to both the public and the medical community: drug treatment of depression, anxiety disorders, schizophrenia, and bipolar disorder; treatment of psychiatric disorders in the HIV-positive patient; the increasing use of combination pharmacotherapy; the impact of pharmacokinetics in clinical psychopharmaco-therapy; use of botanical products for psychiatric disorders; and tobacco use and the psychiatric patient.

Clinical Psychopharmacology—A Brief History

Modern clinical psychopharmacology began with Australian psychiatrist John Cade's report of lithium calming in nine of nine agitated psychiatric patients in 1949.[5] The next year Charpentier in France synthesized chlorpromazine, a phenothiazine, as an antihistamine that would be used in surgery. A colleague, Henri Laborit, used it to induce "artificial hibernation" in surgical patients, and in 1952 John Delay and Pierre Deniker were the first psychiatrists to use it in patients with schizophrenia to control agitation and psychosis.[6] In 1954, Smith, Kline, and French marketed chlorpromazine in the United States under the brand name Thorazine. The next 30 years witnessed the development and availability of many similar agents, including other phenothiazines and haloperidol.

Today's antidepressants can look to monamine oxidase inhibitors and tricyclic agents as their predecessors. Iproniazid (Marsilid) was the first drug to be used to treat depression when it was observed to have mood elevating

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effects during evaluation as an antitubercular in tuberculos patients confined to sanitaria. It was withdrawn from the market in less than a year due to fatal hepatotoxity. However, both hydrazine [phenelzine (Nardil)] and nonhydrazine [tranylcypromine (Parnate)] analogs have survived the test of time and remain in use today. Similarly, while imipramine was being evaluated as an antipsychotic agent, it was noted to reduce depression, but not agitation. It was marketed as Tofranil; Elavil (amitriptyline) and other tricyclic antidepressants (TCAs) followed.

The marketing of chlordiazepoxide (Librium) in 1960 and diazepam (Valium) in 1963 dramatically influenced the pharmacotherapy of anxiety and associated disorders. Prior to benzodiazepine availablity, barbiturates, meprobamate, and lesser used drugs such as chlormezanone (Ultran) were the mainstay of drug management. Additional benzo analogs were developed for use in the management of anxiety (lorazepam, clorazepate), seizures (clonazepam), panic disorder (alprazolam), and insomnia (flurazepam, triazolam, temazepam, estazolam).

During the 1980s, a variety of "heterocyclic" antidepressants were marketed including nomifensine (Merital), trazodone (Desyrel), maprotiline (Ludiomil), and amoxapine (Asendin), all of which represented little change in efficacy and safety from tricyclic compounds. With the arrival of fluoxetine, the first of the selective serotonin reuptake inhibitors (SSRI), we had fewer and less severe side effects, greater safety on overdose, and efficacy comparable to the TCAs. The effectiveness of these newer drugs in severely depressed patients has not been specifically studied. There quickly followed sertraline (Zoloft), paroxetine (Paxil), and fluvoxamine (Luvox), and most recently a heterogenous group that includes nefazodone (Serzone), venlafaxine (Effexor), and mirtazepine (Remeron), all of which generally are comparable to fluoxetine in efficacy and safety.

The 1990s have seen a resurgence in antipsychotic agent activity. With the marketing of clozapine (Clozaril) in 1990, an "old" drug (synthesized in 1960) brought back to life because of remarkable efficacy in "resistent" schizophrenic patients, a new era in the pharmacotherapy of schizophrenia was launched, and in some sense, signaled the second psychotropic drug revolution. Risperidone (Risperdal) was released in 1995 and olanzapine (Zyprexa) in 1997; sertindole (Serlect), quetiapine (Seroquel), and ziprazidone are waiting in the wings.

Major Anxiety Disorders

The major anxiety disorders include generalized anxiety disorder (GAD), panic disorder, obsessive compulsive disorder (OCD), posttraumatic stress disorder (PTSD), adjustment disorders, and phobic disorders.

Benzodiazepines continue to be the mainstay of drug treatment for these disorders. In general, short-acting compounds (lorazepam) are preferred over long-acting agents because they cause fewer complications in the elderly, in patients with hepatic-disease, and in individuals with chronic obstructive pulmonary disease. Physical dependency is a disadvantage of using these agents, especially in patients who have cross-dependency to sedative-hypnotics and alcohol. Although some patients may be at risk for benzodiazepine abuse, there are clearly many who benefit from these agents without abusing them.[7,8]

Benzodiazepines are GABAergic compounds and facilitate hyperpolarization of the nerve cell in conjunction with endogenous GABA (gamma-aminobutyric acid).[9] This effect decreases firing of adrenergic, serotonergic, and dopaminergic neurons, leading to calming, sedation, and sleep. All benzodiazepines appear to be equally effective for most anxiety disorders, although alprazolam and clonazepam have been studied and marketed specifically for panic disorder.[10,11]

Buspirone (BuSpar) is a nonbenzodiazepine anxiolytic with affinity for the 5-HT1a receptor that may be helpful for chronic, generalized anxiety. Onset of action is slow and may take up to two weeks. Buspirone may be useful for patients with a history of alcohol or other substance abuse. Gepirone and ipsapirone are investigational serotonin partial agonists that are being developed for the treatment of anxiety disorders.[12]

Antidepressants are effective anxiolytics. Tricyclics such as imipramine have shown good efficacy in panic disorder as have SSRI.[13,14] Clomipramine and the SSRI are effective for OCD and monamine oxidase inhibitors (MAOI) have demonstrated effectiveness for phobic disorders.[15-17] Propranolol and other beta-blockers are effective for "somatic" anxiety, including performance anxiety and "stage fright."[18,19]

The identification of L-glutamate as the major excitatory neurotransmitter in the central nervous system (CNS) has opened new avenues for anxiolytic drug development. Glutamate receptors bind a variety of endogenous compounds: N-methyl-D-aspartate (NMDA), kainic acid (KA), and α-amino-3-hydroxy-5-methyl-4-isoxazole propionic acid (AMPA). One type of glutamate receptor gates both voltage- dependent and -independent currents carried by Na^+, K^+, and Ca^{++}. Calcium, as a "second messenger," can initiate a wide range of intracellular responses. Another type of receptor links directly with the phos-phoinositol and cyclic-AMP second messenger systems.[20] Thus, different combinations of receptor subtypes can influence specific functions of individual synapses and neurons. Drugs that antagonize glutamate receptors, for example NMDA antagonists and calcium channel blockers, are being developed and evaluated for potential clinical use.

Major Affective Disorders

Depression.—Selective serotonin reuptake inhibitors (SSRI) are generally the drugs of first choice for major depression, although as noted above they may not be as effective as TCA in severe depression. Antidepressants currently available in the United States are shown in Table 1. As a class, they are as effective as the older TCAs and MAOIs with fewer and less severe adverse effects. They are also much safer on overdose. As the name implies, they are selective for inhibition of reuptake of serotonin but do not affect norepinephrine or dopamine reuptake. They bind to specific sites on the presynaptic serotonin transporter protein complex, preventing endogenous serotonin from binding and being carried back into the presynaptic nerve ending. Synaptic serotonin levels increase as does postsynaptic binding to specific serotonin receptors. However, the SSRI have no direct affinity for these serotonin receptors and in this respect are not selective within the serotonin system.[21]

Some of the newer antidepressants have a broader spectrum of activity. Venlafaxine (Effexor) prevents both serotonin and norepinephrine presynaptic reuptake while nefazodone (Serzone) combines serotonin presynaptic reputake inhibition with postsynaptic 5-HT2 blockade. Mirtazepine (Remeron) has no reuptake inhibiting activity on either system but promotes presynaptic norepinephrine release (blocks α-2-adrenergic autoreceptors) and presynaptic serotonin release (blocks serotonergic heteroreceptor); it also binds to postsynaptic 5-HT2 and 5-HT3 receptor.[22] These combined effects may produce clinical response in specific patients unresponsive to other agents with narrower binding profiles. Bupropion (Wellbutrin) is selective in inhibiting presynaptic dopamine reuptake and can produce more activating effects in patients.

Future research in this area will be directed at development of antidepressant drugs that will affect mechanisms operating in the postsynapse. A recurrent problem with

Table 1.—Antidepressants available in the United States*

Generic Name	Trade Name	Daily Dosage Range (mg)
TCA†		
amitriptyline	Elavil	50-300
amoxapine	Asendin	100-600
desipramine	Norpramin	50-300
doxepin	Sinequan	75-300
imipramine	Tofranil	50-300
maprotiline	Ludiomil	50-300
nortriptyline	Pamelor	50-200
proptriptyline	Vivactil	15-60
trimipramine	Surmontil	15-90
SSRI§		
fluoxetine	Prozac	10-80
fluvoxamine	Luvox	100-300
paroxetine	Paxil	10-50
sertraline	Zoloft	50-200
MAOI‡		
phenelzine	Nardil	15-90
tranylcypromine	Parnate	10-60
Other		
bupropion	Wellbutrin	300-450
mirtazepine	Remeron	15-45
nefazodone	Serzone	300-600
trazodone	Desyrel	300-600
venlafaxine	Effexor	75-375

***as of June 1997**
†tricyclic antidepressants
§selective serotonin reuptake inhibitors
‡monamine oxidase inhibitors

Table 2.—Drugs Interacting with Protease Inhibitors* via Inhibition of CYP3A3/4†

tert-amine TCA	Ca^{++} channel blockers
nefazodone	
sertraline(weak)	hydrocortisone
fluoxetine	dexamethasone
bupropion	androgens
carbamazepine	estrogens
ethosuximide	progesterone
	oral contraceptives
alprazolam	
diazepam	amiodarone
midazolam	disopyramide
triazolam	lidocaine
	propafenone
erythromycin	quinidine
clarithromycin	
troleandomycin	alfentenil
	cyclosporin
astemizole	glyburide
loratidine	lovastatin
terfenadine	tamoxifen

*protease inhibitors include ritonavir, saquinavir, indinavir, and nelfinavir.

†protease inhibitor inhibition of 3A3/A4 delays clearance of these drugs and can result in systemic accumulation, increased blood and tissue levels, and development of side effects and toxicity.

antidepressants is the long time-to-onset before patients begin to respond. Time lags are likely due to an indirect mechanism of action, requiring "activation" of an endogenous neurotransmitter which in turn initiates a slow postsynaptic response. Drugs that directly penetrate the postsynapse, affect second messenger systems (G-proteins), and/or directly stimulate production of cyclic-AMP within the cell should speed up the onset of antidepressants' therapeutic effects.

Bipolar Disorder.—Lithium salts have been the most widely-used drug treatment for the symptoms of bipolar disorder (manic-depressive illness) since 1970, when Eskalith was marketed by Smith, Kline, and French. Lithium has been most effective for the manic/hypomanic phase of the illness[22,24] and has shown good efficacy in prophylaxis of manic episodes.[25] It has shown less efficacy in prevention of depressive episodes and least efficacy in active treatment of the depressed phase of the illness.[25]

The "magic" of lithium continues to impress us. In a pharmacologic world of complex molecular structures of fused rings and multiple side chains, lithium remains a simple inorganic cation, similar to sodium and potassium. Yet, by a mechanism still not precisely known, it can produce profound changes in mood and behavior at effective blood levels. It remains one of the few psychiatric medications that requires blood level monitoring for safe and effective use. Unfortunately, there are adverse effects which limit its use in specific patients. In addition, there is a 20% to 30% nonresponse rate to lithium, prompting the search for alternative treatments.[26]

Anticonvulsant medications have emerged as effective, tolerable treatments for bipolar disorder. Their use is based on a view of bipolar disorder as a variant of seizures, with hyperactivity as the clinical outcome rather than a tonic/clonic major motor seizure.[27] Initially, carbamazepine (Tegretol) was used with good results, especially in patients that have frequent hypomanic/manic episodes ("rapid cyclers"),[28] then divalproex (Depakote).[29,30] Now, two new anticonvulsants, gabapentin (Neurontin) and lamotrigine (Lamictal), are being used with good results and minimal side effects. Today, divalproex has replaced carbamazepine as the drug of choice for rapid cycling and mixed-state patients and is increasingly used as first-line treatment of bipolar I (manic) and II (hypomanic) patients. One advantage over lithium is that it can be administered in a loading dose of 20 mg/Kg on day one without causing significant adverse effects.[31] This approach can accelerate onset of effect without using adjunctive antipsychotic agents.

Schizophrenia

The efficacy of clozapine (Clozaril) in schizophrenia challenges the long-held belief that an effective antipsychotic agent must also produce acute extrapyramidal side effects (EPS). The pharmacology of this "atypical" agent is different from that of older agents: less binding to postsynaptic dopamine D2 receptors, increased binding to D4 and D1 receptors, binding to postsynaptic 5-HT2 receptors.[32] This cluster of effects is likely responsible for its efficacy in improving "negative" (deficit) symptoms of schizophrenia, an effect hereto untouched or worsened by older agents. Similar profiles have emerged with risperidone and olanzapine. On the horizon, sertindole, quetiapine, and ziprazidone wait for approval and clinical use. All of these agents represent a narrowing of the pharmacologic profile with increased specificity on receptors thought to be modulating the expression of symptoms in schizophrenia.

The HIV-positive Patient

Most HIV-infected patients eventually develop a number of CNS symptoms of varying severity. While the virus cannot penetrate the blood-brain barrier itself, it penetrates macrophages that enter the CNS and cause damage to mesodermal cells and microglia.[33] HIV-associated CNS problems include development of mild cognitive deficits, dementia, and delirium.

Table 3.—Cytochrome P450 Enzymes: Substrates, Inhibitors, Inducers

CYP1A2	**CYP2C9/2C19**	**CYP2D6**	**CYP3A3/4**	
Substrates				
3° TCA	3° TCA	2° & 3° TCA	3° TCA	Ca^{++} channel blockers
clozapine	diazepam	fluoxetine	fluoxetine	cortisol
caffeine	NDSAIDs(2C9)	paroxetine	nefazodone	dexamethasone
haloperidol	omeprazole	venlafaxine	sertraline	androgens
methadone	phenytoin(2C9)	chlorpromazine	bupropion	estrogens
propranolol	propranolol	clozapine	carbamazepine	OCPs
tacrine	warfarin(2C9)	haloperidol	ethosuximide	amiodarone
theophylline	perphenazine	alprazolam		disopyramide
		risperidone	diazepam	lidocaine
		thioridazine	triazolam	propafenone
		codeine	midazolam	quinidine
		dextromethorphan	erythromycin	alfentanil
		ethylmorphine	clarithromycin	cyclosporin
		beta-blockers (lipophilic)	troleandomycin	glyyburide
		1C antiarrhythmics	astemizole	lovastatin
		m-CPP (meta-chlorophenyl-piprazine)	loratidine	cisapride
			terfenadine	
tamoxifen				
Inhibitors				
fluvoxamine	fluvoxamine	fluoxetine	nefazodone	erythromycin
ciprofloxacin	fluoxetine (weak)	norfluoxetine	fluoxetine	clarithromycin
grapefruit	cimetidine	paroxetine	fluvoxamine	troleandomycin
norfloxacin	omeprazole	sertraline(weak)	sertraline (weak)	diltiazem
cimetidine		desipramine (weak)	ketoconazole	verapamil
		cimetidine	itraconazole	cimetidine
		fluphenazine	fluconazole	grapefruit
		quinidine	miconazole	
Inducers				
tobacco			carbamazepine	cortisol
omeprazole			phenytoin	dexamthasone
			barbiturates	rifampin

Mild symptoms include decreased psychomotor processing, short-term memory loss, and difficulty concentrating. These symptoms may be associated with depression and may respond to a TCA or SSRI antidepressant. Anticholingeric agents should be avoided as they may cause a delirium-like reaction. While benzodiazepines may be helpful for excessive anxiety, their use may worsen some of the cognitive symptoms of the disease, especially memory loss.

HIV encephalopathy (AIDS dementia) occurs in a significant number of patients. It appears to involve selectively the basal ganglia, temporal lobes, and thalamus. Symptoms include hypereflexia, psychomotor slowing, shuffling gait, mental slowing, tremor, and apathy. Many of these symptoms may respond to low-dose methylphenidate (2-10 mg/d).[34]

Psychotic symptoms occur in 3% to 15% of HIV-positive patients and should be treated with agents such as haloperidol, risperidone, (and possibly olanzapine) rather than drugs with more anticholinergic and cardiovascular side effects (eg, chlorpromazine). These agents may also produce improvement in delirium.

The typical HIV-positive patient will be taking many mediations: antiviral agents, antibiotics, drugs for side effects, nutritional supplements, and more. The risk of drug interaction is high, especially in patients receiving protease inhibitors because these agents can inhibit the metabolism of a number of drugs taken by these patients, including benzodiazepines, bupropion (Wellbutrin), and meperidine (Demerol).[35] Other interacting drugs are listed in Table 2. Pharmacology consultation is indicated for the complicated patient taking multiple medical and psychotropic medications.

Combination Pharmacotherapy

It is more the rule than the exception that patients with psychiatric disorders are taking more than one medication simultaneously. First, some primary psyychiatric disorders may require treatment with more than one drug. Major depression with psychotic features, for example, may require concurrent use of an antidepressant and an antipsychotic agent. Some patients with paranoid schizophrenia may need olanzapine (Zyprexa) for psychotic symptoms and lorazepam (Ativan) for intermittent agitation. Second, comorbid psychiatric disorders often require combination pharmacotherapy. The patient with schizophrenia who abuses cocaine may be treated with risperidone (Risperdal) and desipramine (Norpramin), the latter agent to decrease cocaine craving and minimize the severity of the rebound depression. Third, the patient may have a coexisting medical illness that requires drug therapy. Diabetes, asthma, hypertension, peptic ulcer disease, and cardiac disease usually are treated with medications that can affect central and autonomic activities. Concomitant use with psychotropic agents may lead to clinically-significant drug interactions, additive adverse effects, or both. These interactions may be potentiating or antagonistic and may result in worsening of the psychiatric illness, the medical illness, or both. These complex situations require knowledge of the pharmacology of drugs used, an awareness of the potential for medication misadventures in patients taking multiple medications, and selective use of pharmacology consultation.

A positive outcome of some polypharmacotherapy is the enhancement of one drug's therapeutic effect by a second drug. This effect has become known as "augmentation." Examples are the addition of lithium to a primary antidepressant[36] and the use of pindolol (Viskin), a non-selective beta-adrenergic blocking agent that has high affinity for the 5-HT1a autoreceptor located on neuronal dendritic membranes and cell bodies. Concomitant use of pindolol with an SSRI such as sertraline or paroxetine may accelerate the onset of antidepressant effect by preventing endogenous serotonin from binding to these receptors and decreasing presynaptic release.[37] Other examples of augmentation strategies in the treatment of depression include use of thyroid medication,[38] combination of SSRI with TCA,[39] and TCA with MAOI (use with caution).[40]

Significance of Pharmacokinetics

There is increased awareness of pharmacokinetics as a clinically-significant aspect of psychiatric pharmacotherapy. New information about psychotropic drug metabolism via the hepatic cytochrome P450 (CYP450) system stimulated research into drug interactions mediated by this system. Table 3 summarizes clinically-significant metabolic drug interactions involving commonly-used psychotropic drugs.

Pharmacokinetics literally means "drug movement." More precisely, it describes the rate of drug movement through the body by measuring concentrations of parent drug and metabolites in various "compartments." The hallmark pharmacokinetic processes are absorption (A), distribution (D), metabolism (M), and elimination (E). The rate and extent of absorption and distribution often determine the onset of action of drugs, and to some extent, the duration of action. The latter viariable is primarily determined by the rate and extent of metabolism and elimination. Half-life of elimination of a drug or metabolite is the time it takes for concentrations in the blood to decrease by 50% and is inversely related to clearance. Degree of protein binding of drugs is constant for a given drug, but can decrease in protein-deficiency states. Only free (unbound) drug is available to exert a therapeutic or toxic effect. When drug blood levels are measured, total drug (free + bound) is reported. Patients can show an increase in the free fraction of a drug without the total drug level changing. For example, phenytoin free levels increasing from 10% to 15%, due to displacement from protein binding sites by another drug with high affinity for the protein, will result in phenytoin toxicity even though there is no change in the total phenytoin level.

The pharmacokinetic profile of a drug in a given patient is probably the most important determinant of that patient's response to the medication. Assuming medication compliance, the active ingredient in the dosage form must be absorbed in sufficiant quantity to be delivered to the site of action in the concentration needed to elicit the therapeutic effect. If this criterion is not met, all other attributes of the drug are irrelevant. In fact, "nonresponse" may not be due to lack of response to a specific medication, but lack of delivery of the drug to the site of action. An appreciation of these issues can optimize medication response in our patients.

Botanical Pharmacotherapy

The 1990s have seen a resurgence in interest in alternative medicine for the treatment of both medical and psychiatric disorders.

L-tryptophan.—In the 1980s, the amino acid L-tryptophan was promoted as a "natural" sleep inducer and was used successfuly by many people for years. However, one

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or more batches produced a "double-molecule" tryptophan which could not be converted to serotonin in the brain, and resulted in 40 deaths and over 2,000 cases of eosinophilia-myalgia syndrome (EMS), a disabling muscle disorder.[41] It is possible that L-tryptophan will be remarketed in the future with increased control over its manufacture.

Melatonin.—Melatonin is the another "natural sleeping pill." It has been used most widely for "jet lag" and insomnia. Melatonin is the hormone produced from tryptophan by the pineal gland. Production and secretion increase 10-fold in the dark and signal the body that it is time to sleep. This effect is well known and is the basis for using melatonin as a sleep aid. Effective doses are 0.1 to 0.3 mg taken 30 minutes before retiring. Most of the over-the-counter melatonin products contain 2-3 mg (10 times the maximal effective dose) which can result in blood levels that are 30- to 50-fold higher than normal sleep levels. These high levels have been associated with hypothermia, mental impairment, and morning residual sedation.[41]

Gingko biloba.—Gingko is an herb widely used in Europe to improve memory and cognitive function. Gingko is a mild vasodilator and its effects on cognition are likely related to increased blood flow in the brain. It may also have some direct effects on memory independent of its vascular effects, leading to interest in its use in patients with Alzheimer's disease. Gingko also has antioxidant effects and has been used to limit tissue damage after strokes, apparently with good results.[42] There is no evidence to support the claim that it is a cognitive enhancer or "smart drug." The only "reliable" form of gingko is the French-made liquid extract (24%), which is the form used in the 24 placebo-controlled studies. All claims for gingko apply only to this dosage form.[42]

St. John's wort.—The origin of this name is unclear. It is an herb has been very popular in Germany, England, and several other European countries and is used to treat depression. Also referred to as hypericum, it contains over a dozen bioactive compounds, the most active of which seems to have MAO inhibiting activity. There are studies showing a beneficial effect in "mild" depressions and in depression associated with menopause. Interestingly, hypericum contains betasitosterol, a plant sterol with mild estrogenic effects. Despite widespread use of hypericum, the bioactivity, safety, and constituents of this herb are not fully understood. Depressed patients taking standard antidepressants should not take St. John's wort because of potential MAOI-induced toxicity.[43]

Valerian.—*Valeriana officinalis* is a European/Western Asian herb that has traditionally been employed as a natural sedative. It has also been used to stimulate appetite, control gas, relieve headache, and lower high blood pressure. The active constituents are the valepotriates, a group of triesters with sedative activity.[44] It has demonstrated efficacy as a hypnotic (120 mg), producing improvement in sleep quality with minimal change in sleep architecture. Valerian may also have an antidepressant effect although the mechanism is unclear.[45] Valerian is available as the root, and a maceration is made in cold water "using four teaspoonfuls and left overnight, stirring occasionally"[46] [I'm not sure how one does this while getting a good night's sleep!]. Another herbalist recommends using 1 teaspoonful of dried root infused in 1 pint of water and drunk cold, 1 cup throughout the day and at bedtime.[47] The taste is bitter.

Tobacco and the Psychiatric Patient

Smoking continues to be the leading cause of preventable illness in the United States with nearly 50 million Americans still smoking cigarettes (about 25% of the adolescent/adult population). While smoking rates have dropped overall, they are rising in children and women. Psychiatric patients smoke more than the public at large with documented prevalences of 80% to 90% in patients with schizophrenia, 60% to 70% in bipolar patients, and 40% to 50% in patients with depression.[48] There is a clear association between smoking and psychiatric morbidity.

Smoking also can accelerate metabolism of many psychotropic drugs, resulting in higher dosages needed to achieve therapeutic levels, and possibly increased side effects.[49] This effect is not caused by nicotine, but by polycyclic hydrocarbons contained in the "tars." Alternately, smoking cessation can cause previously effective drug levels to become toxic over a period of weeks. When smoking patients enter the psychiatric hospital, they usually reduce their smoking, sometimes significantly. Medications are selected, dosages are increased in the hospital environment and when the patient is ready for discharge, effective doses have been attained. However, when the patient leaves this controlled environment, the preadmission level of smoking is resumed, the previously-effective dosages and levels become subtherapeutic, and the patient relapses.

When nondepressed patients stop smoking, they get depressed; when depressed patients stop smoking, their depression worsens.[50,51] Some studies suggest that many smokers are treating an undiagnosed depression with nicotine and that after quitting smoking, professional treatment for depression is indicated, not only to help the patient with the depression but to prevent a smoking relapse.[52] Bupropion (Wellbutrin) has been available for many years as an effective antidepressant. It is now also marketed as Zyban in a slow-release dosage form for smoking cessation. Bupropion 300 mg per day in combination with counseling, produced average smoking cessation rates of 43% at four weeks in three placebo-controlled double-blind trials involving nearly 1,700 patients).[53] In comparison to nicotine patch, cessation rates at four weeks were 49% for slow-release bupropion *vs* 36% for patch and 23% for placebo.[54] Bupropion in combination with a nicotine patch produced the best one-month cessation rates at 58%.[54] These results coupled with bupropion's efficacy as an antidepressant and its chemical relationship to anorectant agents (diethylpropion) make it attractive as a drug treatment for smoking cessation.

Current findings suggest the need for greater attention to the problem of smoking in psychiatric patients with emphasis on helping the patient to stop smoking in ways that do not worsen underlying psychiatric morbidity.

Future Developments in Clinical Psychopharmacology

What does the future hold for psychopharmacology in the 21st century? The current trends of creating "narrow-spectrum" compounds will continue in the development of drugs that have greater specificity for target receptors, polypeptides, and proteins in effecting pharmacologic changes. The advances in molecular biology have given medicinal chemists new tools in designing drugs that "zero-in" on one cellular process to effect a change rather than causing nonspecific, broad-spectrum effects on many systems. The development of N-methyl-D-aspartate (NMDA) antagonists for the treatment of anxiety, antipsychotic agents specific for dopamine subtype receptors, and antidepressants with specific serotonergic agonist effects on subtype receptors all represent efforts in this direction.

There will be continued refinement of what began as pharmacoeconomics and now has evolved into disease management economics and health economics in psychiatry. Studies of cost-benefit and cost-effectiveness will be essential in judging a new compound's place in the pharmacopeia and will provide the basis for drug inclusion into restricted formularies and disease management protocols. Research in this arena will expand considerably as payors look for more efficient delivery of care to the psychiatric patient at minimal price.

The role of ethnicity and culture in the pharmacotherapy of psychiatric disorders has become an important variable to consider in designing effective treatment plans. Certain ethnic groups metabolize drugs more slowly than others, due to genetic polymorphism causing lack of an enzyme and a metabolic pathway.[55,56] The identification of such patients (phenotyping) has been almost exclusively a research activity, but eventually these techniques will be used clinically to optimize drug response and minimize adverse effects and toxicity.

Increased research should produce compounds that will effectively treat the violent and hyperagressive patient. Currently, most treatment involves use of CNS depressants that dampen central neuronal circuits believed to mediate this behavior. Better understanding of the role of serotonin and other neurotransmitters in violent behaviors[57,58] should result in the development of pharmacotherapy that reduces severity of these behaviors while allowing some degree of productive patient functioning.

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Neuropsychological Rehabilitation in the Treatment of Schizophrenia

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Abstract—The Schizophrenia Rehabilitation Center at the Institute of Living has begun to develop rehabilitation techniques based on a neuropsychological approach to ameliorate the cognitive deficits associated with schizophrenia. A study was designed to test the hypothesis that patients receiving attention skills training would demonstrate improved performance on neuropsychological tests measuring concentration. Five out of the seven subjects significantly improved on more than half of the neuropsychological measures. In the two case studies reviewed, significant increases in test scores were observed more frequently during cognitive rehabilitation then when psychoeducation classes were substituted for the attention skills training. In addition, patients showed improvement on the Positive and Negative Syndrome Scale and Quality of Life Scale. The data support the efficacy of attention skills training using a process specific approach. However, it is uncertain if attention skills rehabilitation is a necessary or sufficient factor in producing the therapeutic change.

Introduction

SCHIZOPHRENIA is a devastating disease for both the individuals afflicted and their families. Epidemiological studies suggest that two million people in the United States are affected.[1] Many of these individuals suffer through decades of recurrent hallucinations, delusions, disorganized speech and behavior, and cognitive impairments that make daily existence a nightmare. While medications may alleviate some of these overt symptoms, many people remain gravely disabled by persistent impairments in concentration, communication, motivation, and affective life. They frequently are unable to work, love, or find satisfaction in any productive or meaningful endeavors. As the years of disability and confusion persist, they often withdraw into a hollow, aimless, and disenfranchised existence.

Numerous investigations have emphasized that schizophrenia is a brain disease and have specified the cerebral abnormalities present in the illness.[2–6] The intellectual deficits associated with the disorder have been well documented and reviewed.[5,6] For example, in a sample of schizophrenia patients receiving treatment at the Institute of Living,[7,8] a majority were found to demonstrate significant deficits in attention, memory, and psychomotor speed. A substantial subset of these patients also showed additional deficits such as decreased verbal skills and problem solving ability. Even many of the individual patients with intact verbal skills showed deficits in concentration and decreases in their ability to learn verbal material. There is evidence that this poor neuropsychological test performance correlates with impaired academic, vocational, and self-care skills.[9–11] These deficits may create pronounced handicaps and obstruct social or vocational skills training, since the patients' lack the prerequisite cognitive skills necessary to accomplish these tasks.[12–15] In addition, these cognitive deficits may be partly responsible for the social and monetary costs of the illness.[16]

Neuropsychological rehabilitation exercises aimed at improving a patient's attentional skills may be beneficial. It has been suggested that concentration can be improved

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through repeated drill and practice in a manner analogous to the way muscle strength is improved through weight training.[17] Training of these prerequisite microlevel skills may need to precede or accompany more macrolevel psychotherapy or vocational programs to ensure their efficacy.[18] For instance, patients may need to attend accurately to spoken language before they can learn in therapy about the benefits and risks of medications. The literature supports the idea that brain-injured patients who have completed cognitive skills training were more likely to show improved performance on neuropsychological tests and return to work.[4,19]

Cognitive rehabilitation techniques may include several different approaches.[17,20] The "process specific" approach is aimed at improving specific areas of cognitive function. For example, a patient would repeatedly practice identifying when they hear specific phrases on a tape recording in the hope that this exercise would help them concentrate when listening to other people. As the rehabilitation proceeds, the phrases get more complex and the recordings get longer to more closely approximate normal conversations. The "functional adaptation" approach facilitates performance in particular naturalistic settings (eg, coaching a patient on specific employment skills on the job). The "general stimulation" approach attempts to improve functioning by encouraging use of intellectual skills at any level. Theoretically, a process approach might be superior because it would promote more generalization of skills by improving underlying abilities needed for many different kinds of tasks. However, the functional adaptation approach may work more efficiently by teaching the exact skills needed to complete a specific daily task (ie, the goal is not to help patients accurately identify spots appearing in their visual field while looking at a computer monitor, but to identify dirt in the mirror while washing their face). Yohman et al suggest that more intensive practice with specific compensatory strategies (eg, tape recording classes so the verbal information can be repeatedly reviewed) results in better effects.[21] Any or all of these approaches may prove to be effective agents of change.

Lynch describes a "building block" approach to cognitive rehabilitation which starts with the basic neuropsychological processes and practices increasingly difficult levels until the target behavior is mastered.[22] In other words, one has to learn to crawl, step, and walk before one can run. In attentional skills training, first simple visual and auditory reaction time is taught. This is followed by choice reaction time, tracking, scanning, and eventually continuous performance, sequencing, and simultaneous multiple attention tasks. As the patients strengthen their attentional capacity, other remediation programs can be added to apply the basic cognitive skills to tasks required for adaptive functioning. These programs integrate the training in attentional processes with social skills development and vocational rehabilitation.[11,23]

A number of review articles have pointed to the promise and problems of using cognitive rehabilitation to improve the adaptive functioning of patients with schizophrenia.[17,20,23–26] In a pilot study conducted at the Institute of Living, patients receiving attention skills training using a process specific approach demonstrated more frequent improvements on neuropsychological tests than expected by chance.[27] A control group participating in leisure activities for a similar duration did not show this pattern of improvement. Another study by Olbrich and Mussgay also demonstrated that cognitive retraining significantly improved attentional abilities in acutely psychotic patients when compared to a control group of patients who did not receive training.[28] In addition, Hermanutz and Gestrich showed that computer-assisted attentional training may also be effective.[29] Several other studies report improved concentration associated with cognitive rehabilitation.[30,31] However, when positive changes in test performance have been observed, the clinical and functional significance of the changes were unknown. Corrigan and Storzbach suggest that the ecological validity of cognitive rehabilitation needs to be determined (ie, it is unclear whether a 15% reduction in reaction time results in an improvement in the patient's ability to concentrate while driving, reading, or answering the phone at work).[26]

In addition, the factors responsible for improvements on neuropsychological test performance and/or increases in adaptive functioning need to be clarified. A variety of nonspecific factors may account for the improvements, rather than the repeated practice on basic cognitive tasks.[25] Examples of these general factors may be the effects of social interaction, spontaneous improvement over time, or changes in the severity of symptoms.[21] Olbrich and Mussgay suggest that social interaction did not account for the effects on performance.[28] On the other hand, Hermanutz and Gestrich suggest that the expectations of trainers or patients and the patients experiencing that they can do something for themselves may have contributed to the improvements.[29] Benedict and Harris suggest that the training exercises, rather than experimenter attention, positive urging, and familiarity with the experimental apparatus were responsible for the improvement.[31] They suggest that task-specific training and a greater sense of goal achievement may have also been a causal factor in the improvement.

Not all attempts to improve attention skills have proven successful. In a research protocol where 15 hours of cognitive rehabilitation was administered, the patients failed to demonstrate improvement.[32] However, the length of training may not have been sufficient to produce a

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treatment effect. The duration of remediation programs required to produce change remains unclear. Programs have greatly varied in duration. At one end of the continuum are intervention programs claiming success in 24 hours of training spread across eight weeks.[33] Others report that therapeutic milieus (which incorporate cognitive training) for five hours per day for three months are effective.[11,21] However, the efficacy of these methods was variable as was the area of cognitive skill they attempted to rehabilitate.

Currently, there is a need to evaluate the specific conditions or treatments useful in producing changes in attention (and ultimately adaptive functioning). Clarifying the nature of the factors which account for improvement in attention skills training remains an important task for clinical research. The common occurrence of attention deficits in schizophrenia strongly points to the need to develop cognitive rehabilitation techniques as one of a number of treatment approaches for this disorder.

The investigation reviewed below was designed to assess whether a process approach to cognitive rehabilitation could improve the attention skills of individuals with schizophrenia. It was hypothesized that patients receiving attention skills training would demonstrate improved performance on neuropsychological tests measuring concentration and increases in adaptive functioning. It was further hypothesized that the improvements would be associated with the specific drill and practice of the attention skills rehabilitation, rather than general stimulation or other nonspecific factors in the treatment.

Methods

Based in part on the pilot study conducted by Seltzer, Cassens, and Pier,[27] a more intensive rehabilitation program was initiated at the Institute of Living. The Schizophrenia Rehabilitation Center was opened in 1995 to develop and evaluate the efficacy of neuropsychological rehabilitation techniques in the treatment of this disorder. The center provides highly structured group and individual treatments within a partial hospitalization program. The patients participate in 4.5 hours of rehabilitation activities three days per week. The primary goal has been to provide individuals with an experience of success to improve their motivation and to provide large amounts of cognitive stimulation to increase their concentration. The secondary goal has been to help patients use their improved motivation and concentration to get a job or engage in other productive and meaningful endeavors. In addition to the attention skills training and psychoeducation provided as part of the research protocol, the patients also participate in a comprehensive array of activities, including: 1) a breakfast group that helps the patients organize and plan their daily routine to compensate for executive skill deficits; 2) physical exercise to counteract their physical and mental amotivation, apathy, and lack of initiative; 3) a vocational rehabilitation group to provide an opportunity to apply their developing attentional skills and motivation in work settings, and; 4) a relaxation group to help the patients unwind from the intensive rehabilitation routine. Family therapy and home visits that help them generalize the skills they learn in the clinic to their community settings are also provided.

The study used a within-subjects multiple baseline design. All subjects were enrolled in the Schizophrenia Rehabilitation Center and the data reflect their first six months in the program. Their diagnoses were determined using the Structured Clinical Interview for DSM III-R. No concurrent substance abuse or central nervous system disorders were present.

Procedures.—Each subject completed a baseline evaluation prior to treatment. The evaluation consisted of a structured interview using the Positive and Negative Syndrome Scale[34] to assess level of symptomatology and the Quality of Life Scale[35] to measure the level of adaptive functioning. In addition, a battery of neuropsychological tests was administered to measure attention skills, including: the Auditory Attention Test,[36] the Continuous Performance Test,[37] the Cancellation Test,[36] the Paced Auditory Serial Addition Test[38] or the Auditory Reaction Time,[39] and the WAIS-R Arithmetic and the Digit Span Subtests.[40] The Auditory Reaction Time was used if the subject could not learn the instructions for the Paced Auditory Serial Addition Test. The neuropsychological test battery was repeated three or four times during the baseline phase. When available, a community case manager was asked to complete the Attention Questionnaire[41] to rate how much the patient's concentration impaired their everyday activities.

The subjects then received 24 weeks of training. The training was divided into three consecutive eight-week phases. During each treatment phase, the patient received either attention skills training or psychoeducation in an ABA design. Two different sequences of treatment were used. In the first sequence, a patient completed eight weeks of attention skills training followed by eight weeks of psychoeducation classes followed by an additional eight weeks of attention skills training. This sequence was established to observe the effects of first applying the attention skills training, then withdrawing this treatment and reapplying it eight weeks later. In this order, the psychoeducation phase served as a treatment withdrawal phase. In the second sequence, a patient completed eight weeks of psychoeducation followed by eight weeks of cognitive rehabilitation followed by an additional eight weeks of psychoeducation classes. The second sequence was implemented to control for order effects. The subjects were randomly assigned to one of these two treatment sequences. All treatments were administered by the same clinician. The treatments were provided in a group format, where four to six patients received treatment by a licensed clinical psychologist. Other treatments received in the Schizophrenia Rehabilitation Center were held constant across all treatment phases.

Once a week, the patient completed the same six neuropsychological tests administered during the baseline phase. At the end of each eight-week phase, the Positive and Negative Syndrome Scale, the Quality of Life Scale, and the Attention Questionnaire were also repeated. The neuropsychological battery and the structured interviews were administered by researchers blind to the type of treatment provided. Alternative forms of the Cancellation Test, Digit Span Test, and Arithmetic Test were used to avoid practice effects.

To assess the overall change observed during the six-months treatment, a Mann-Whitney *U* statistic was calculated to compare the scores on each of the six neuropsychological tests in the last treatment phase with the subject's baseline scores. To evaluate whether cognitive rehabilitation was associated with improved performance rather than other nonspecific factors, the test scores from each individual treatment phase were compared with the scores from the directly preceding phase or baseline. Mann-Whitney *U* statistics were also used for these comparisons. For example, a subject's test performance during the first cognitive rehabilitation phase was compared to his baseline scores and the scores obtained during the psychoeducation phase were compared with the scores achieved during the first attention skills training phase. Finally, the scores achieved during the last cognitive rehabilitation phase were compared with the subject's performance during the prior psychoeducation phase.

Results

Seven patients completed the within-subjects design. When their neuropsychological test scores during the final treatment phase were compared to their scores during the pretreatment baseline assessment, five out of seven patients showed statistically significant ($P<.05$) improvements on at least half the attention skills measures. Each subject completed six neuropsychological tests of attention, so that a total of 42 (6 tests x 7 subjects) outcome measures were available. Statistically significant ($P<.05$) increases in test scores were observed on 21 of the 42 tests. Currently, the data are being analyzed to compare the test scores achieved during attention skills training to the scores received during the psychoeducation classes. Data from two cases will be presented below.

Case Study: Subject A.—Subject A was a single white male in his 40s with a 20-year history of disability from schizophrenia that had been associated with unemployment, poverty, and severe social isolation. He was randomly assigned to start rehabilitation with attention skills training. During the three repeated baseline evaluations, Subject A demonstrated attentional deficits on four out of six neuropsychological tests, including: the Auditory Attention Test (number correct ranged from 37–41 out of 60), the Cancellation Test (total number of omissions ranged from 31–42), the Continuous Performance Test (percent correct ranged from 84–88), and the Digit Span Test (scaled scores ranged from 5–7). However, he demonstrated low average or better performance on the Arithmetic Subtest (scaled scores ranged from 8–9) and scores within normal limits on the Auditory Reaction Time test (mean time in seconds ranged from 0.237-0.681).

Table 1 lists the statistical significance (Mann-Whitney *U*) of changes in Subject A's test performance, when his scores during different treatment phases were compared

Table 1.—Significance of Changes in Neuropsychological Test Scores
Subject A

Test	**Cognitive rehab. (Phase 1) compared to baseline**	**Pychoeducation (Phase 2) compared to cognitive rehab. (Phase 1)**	**Cognitive rehab. (Phase 3) compared to psychoeducation (Phase 2)**	**Cognitive rehab. (Phase 3) compared to baseline**
Arithmetic	0.417	0.438	0.142	0.387
Auditory attention test	**0.033**	0.500	**0.047**	**0.006**
Auditory reaction time	0.258	0.265	0.472	0.248
Cancellation test	**0.008**	0.053*	**0.047 > *P* > 0.033**	**0.006**
Continuous performance test	0.058	0.172	0.085 > *P* > 0.064	**0.006**
Digit span	0.192 > *P* > 0.133	0.319	0.085	0.248 > *P* > 0.188

*This significance level represents a **decrease** in performance, not improved scores.

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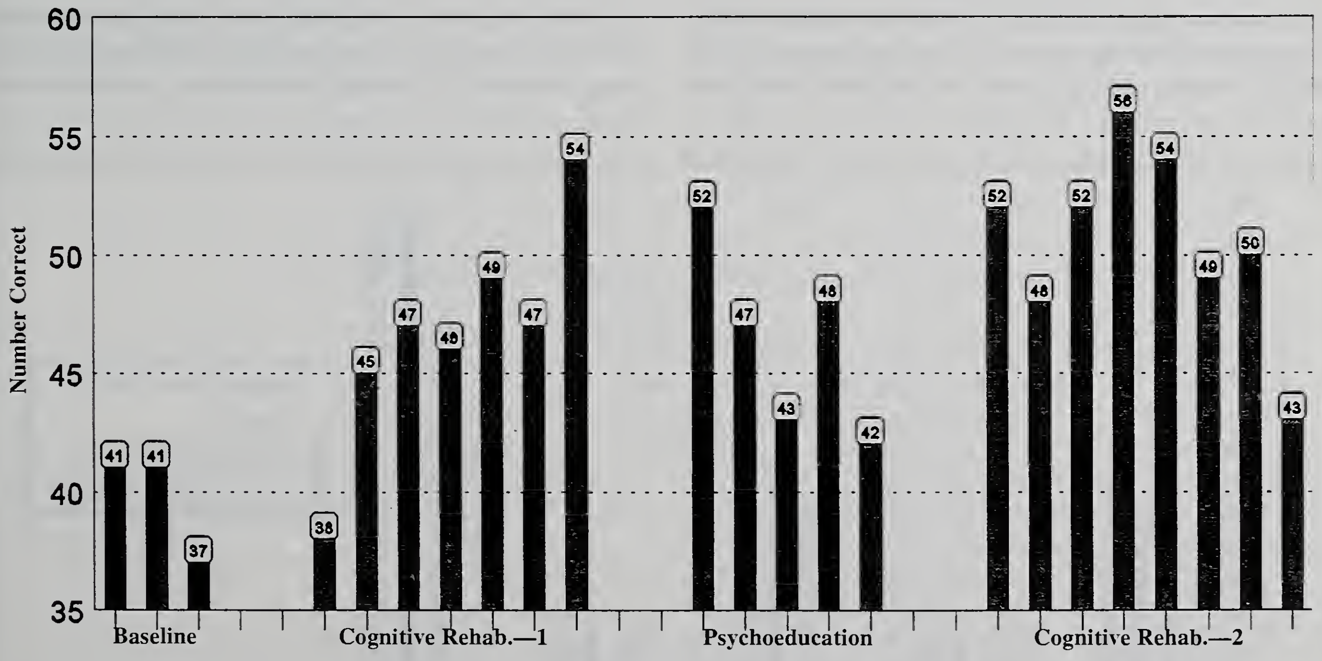
(*P*<0.05 is indicated in bold type). When his test performance during the last psychoeducation phase was compared to his baseline scores, Subject A demonstrated significant improvement on three of six neuropsychological measures. His scores during the final cognitive rehabilitation phase improved on the Auditory Attention Test (number correct ranged from 43–56 out of 60), the CancellationTest (number of omissions ranged from 12–30), and the Continuous Performance Test (percent correct ranged from 92–99). His scores on Arithmetic Test (scaled scores ranged from 8–10) during the final treatment phase failed to show significant changes compared to his baseline performance, as did his scores on the Auditory Reaction Time (mean time ranged from 0.256–0.366 seconds) and the Digit Span Test (scaled scores ranged from 4–9).

During the two cognitive rehabilitation phases, Subject A demonstrated significant improvement on two of six measures (Auditory Attention Test and Cancellation Test). In addition, he showed a trend toward significant improvement on one other test (Continuous Performance Test). However, he failed to show significant increases in his test scores on any of the measures during the psychoeducation phase.

Figure 1 illustrates an example of Subject A's improvements on the Auditory Attention Test, where increases in test scores were associated with the attention skills training, rather than psychoeducation. Subject A's scores during the first cognitive rehabilitation phase were significantly higher than his baseline scores (*P*=.033), while his scores during the psychoeducational phase were not significantly different than his scores achieved during the previous cognitive rehabilitation phase (*P*=.50). Further, his scores during the subsequent attention skills training phase were again significantly greater than his scores during the previous psychoeducational phase (*P*=0.047). His performance on the Cancellation Test replicates this pattern of improved performance during cognitive rehabilitation and not during psychoeducationa treatment. When the attention skills training was withdrawn and psychoeducation started, there was actually a trend toward *decreased* performance.

Figure 2 shows the results of assessments of the severity of Subject A's symptoms. He showed a reduction in positive and negative symptoms, as well as global psychopathology as assessed by the Positive and Negative Syndrome Scale. For example: prior to treatment severe delusions and hallucinations were reported, but by the end of the six months only minimal delusions were observed and hallucinations were denied. Negative symptoms such as blunted affect and withdrawal were reduced from severe to moderate. Figure 3 shows the results of the Quality of Life Interview. On this scale, Subject A reported improvements in his instrumental role functioning,



***Note: The number of data points for each treatment phase are not equal because on several weeks the subject was absent from testing. Nevertheless, the length of each treatment phase was equal (ie, the first cognitive rehabilitation phase lasted eight weeks, but only seven weekly evaluations of attention skills were administered).**

Figure 1.—Auditory attention test—Subject A

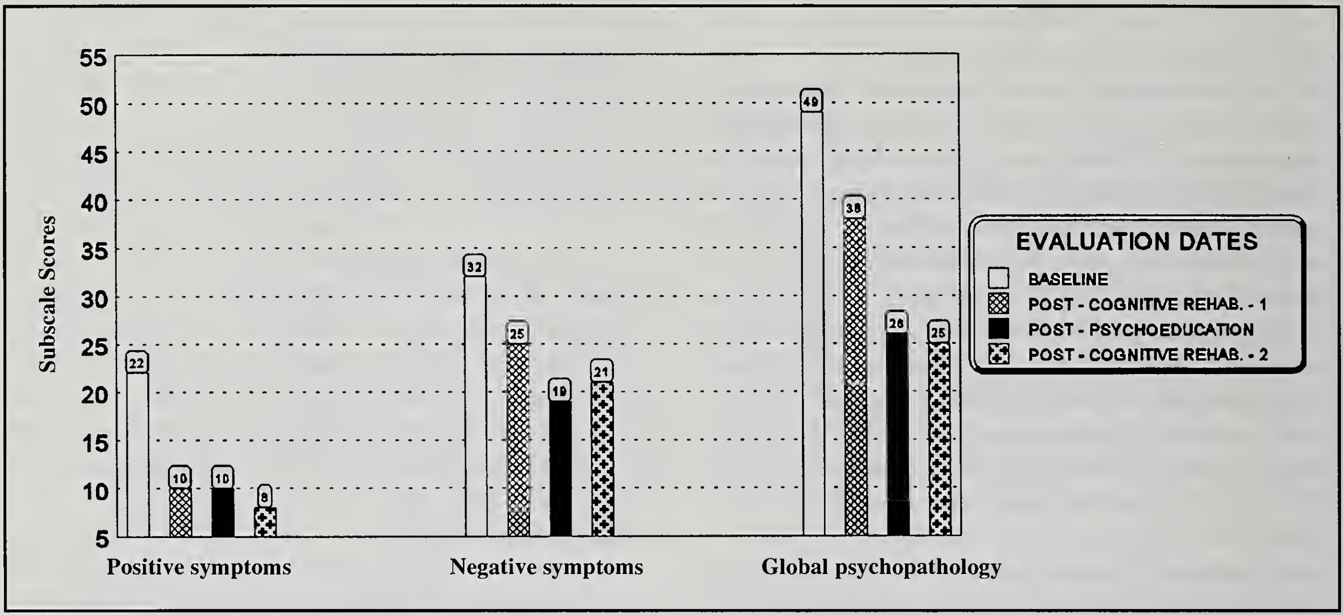


Figure 2.—Positive and negative syndrome scale—Subject A

interpersonal relationships, and intrapsychic foundations. Figure 4 depicts the results from the Attention Questionnaire. On this measure, his case manager reported that the patient's poor concentration was less disabling as rehabilitation progressed. Visual inspection of the data suggests that improvements were observed during *both* attention skills training and psychoeducational phases for the three adaptive functioning measures.

Case Discussion.—Subject A demonstrated substantial improvement in many areas. His increased scores on the weekly neuropsychological measures of attention reflected clinically significant, as well as statistically significant, improvements. For instance, on the Continuous Performance Test, his scores improved by more than 10 standard deviations. While his baseline scores on this measure indicated severe impairment in his ability to attend to visual stimuli, some of his performance during the final treatment phase was almost within normal limits.

There was some evidence that these improvements were associated with cognitive rehabilitation, rather than other nonspecific factors. For instance, his decline in

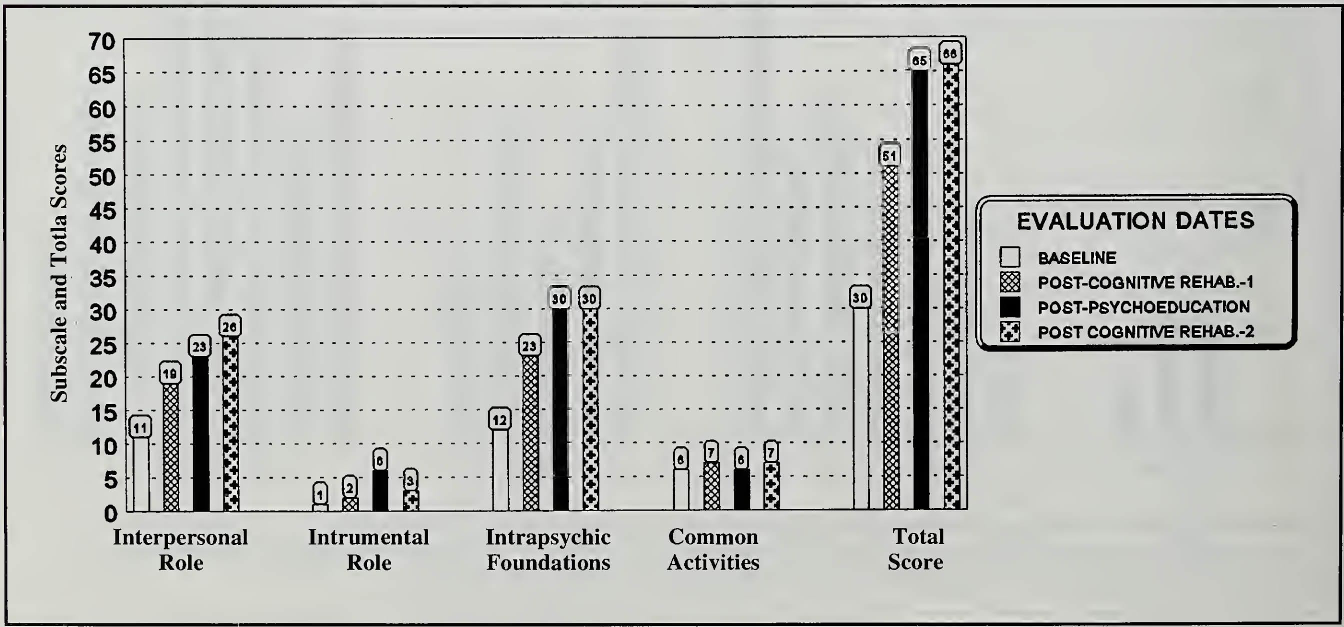


Figure 3.—Quality of life scale—Subject A

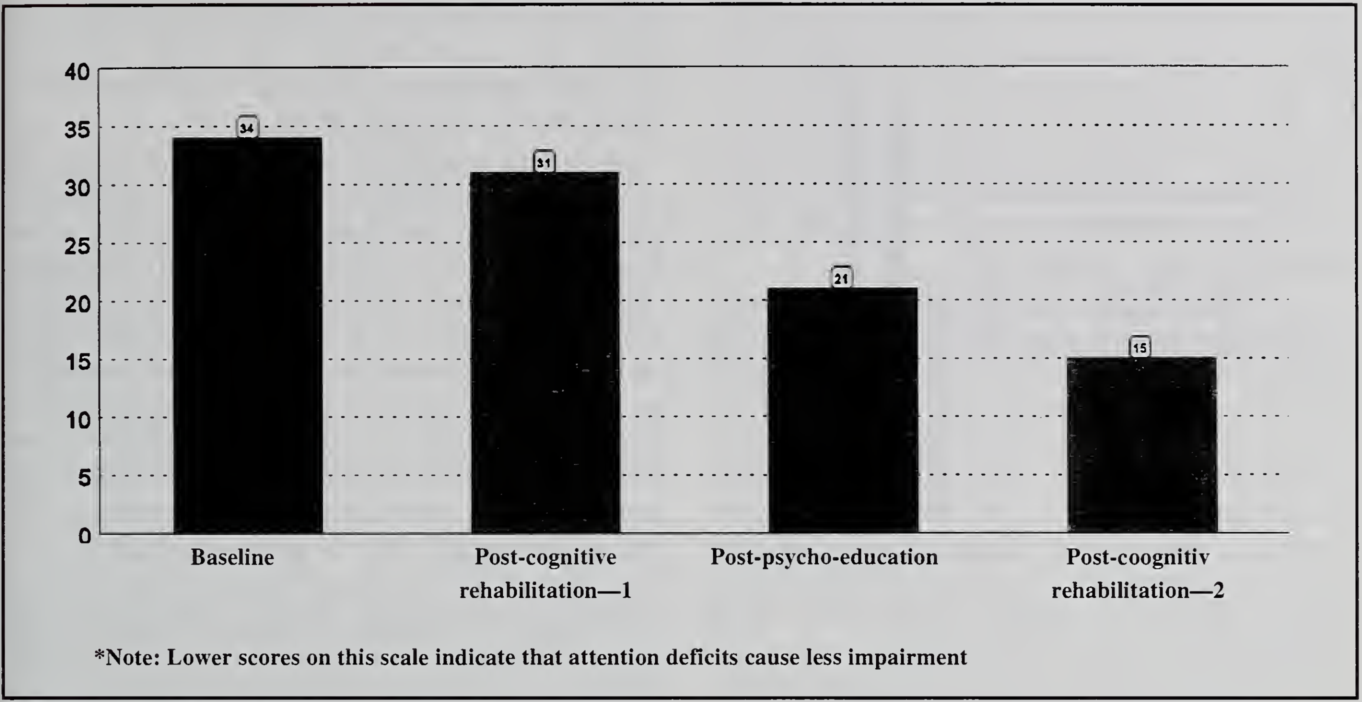


Figure 4.—Attention questionnaire—Subject A*

performance on the Auditory Attention Test when attention skills training was withdrawn and the subsequent rise in scores when the training was reinitiated is strong support for the hypothesis that cognitive rehabilitation was a factor in the outcome. However, other factors besides the drill and practice of the attention skills exercises may account for his improvement. While his scores on several tests increased during the first cognitive rehabilitation phase, in some cases they began to increase in the first week or two of rehabilitation. It is hard to imagine that three to six hours of attention skills training alone produced this improvement. The notion that his improvements were associated with other nonspecific factors is supported by the observation that his increased adaptive functioning and decreased symptomatology occurred during both types of treatment. Subject A remained on a consistent dosage of antipsychotic medication throughout the study, so changes in medication treatment did not appear to affect the results.

This patient demonstrated substantial improvement during his participation in the Schizophrenia Rehabilitation Center programs as assessed by multiple outcome measures. In addition, Subject A's family reported that they could now have conversations with their relative,

Table 2.—Significance of Changes in Neuropsychological Test Scores
Subject B

Test	**Pychoeducation (Phase 1) compared to baseline**	**Cognitive rehab. (Phase 2) compared to psychoeducation (Phase 1)**	**Psychoeducation (Phase 3) compared to cognitive rehab. (Phase 2)**	**Psychoeducation (Phase 3) compared to baseline**
Arithmetic	$0.206 > P > 0.143$	0.214	$0.331 > P > 0.286$	0.077
Auditory attention test	**0.032**	**0.009**	$0.475 > P > 0.426$	**0.002**
Cancellation test	$0.452 > P > 0.365$	0.396	$0.245 > P > 0.207$	**0.024**
Continuous performance test	0.278	**0.009***	**$0.004 > P > 0.002$**	$0.341 > P > 0.285$
Digit span	$0.278 > P > 0.206$	**0.009**	$0.245 > P > 0.207$	**0.002**
Paced serial addition test	$0.143 > P > 0.095$	**$0.015 > P > 0.009$**	0.377	**0.002**

*Note: performance during the cognitive rehabilitation phase was **decreased** (not increased) from performance during the prior psychoeducation phase who for several decades was severely withdrawn and nonverbal. They also reported that he was now able to complete daily chores such as shoveling the snow or raking the autumn leaves. Shortly after his participation in the research protocol, Subject A was able to perform adequately at a part-time paid job provided on the hospital grounds and has begun work with a job coach to secure competitive employment in the community.

Case Study: Subject B.—Subject B was a single white female in her 40s with a 30-year history of schizophrenia associated with unemployment, severe self destructive behaviors, and social isolation. She was randomly assigned to start rehabilitation with psychoeducation classes. During the four repeated baseline evaluations, she demonstrated attentional deficits on four out of six neuropsychological tests, including: the Auditory Attention Test (number correct ranged from 36–56 out of 60), the Cancellation Test (total number of omissions ranged from 3–9), the Continuous Performance Test (percent correct ranged from 98.0–98.5), and the Paced Auditory Serial Addition Test (number correct ranged from 28–48 out of 60). However, she demonstrated average or better performance on the Arithmetic Subtest (scaled scores ranged from 10–15) and the Digit Span Test (scaled scores ranged from 11–13).

Table 2 lists the statistical significance of changes in Subject B's test performance, when her scores during different treatment phases were compared. When her test performance during the last psychoeducation phase was compared to her baseline scores, she demonstrated significant improvement on four of six of the neuropsychological measures, including: the Auditory Attention Test (number correct ranged from 57–60 out of 60), Cancellation Test (number of omissions ranged from 0–6), Digit Span (scaled scores ranged from 15–18), and Paced Auditory Serial Addition (number correct ranged from 49–60 out of 60). She did show a trend toward significant improvement on the Arithmetic Test (scaled scores ranged from 13–17), but failed to show increased scores on the Continuous Performance Test (percent correct ranged from 97.5–100).

During the cognitive rehabilitation phase, Subject B demonstrated significant improvement on three of six measures. However, she showed significant increases in her test scores on only one measure during each of the psychoeducation phases. For example, on the Paced Serial Addition Test, her improvements were associated with the attention skills training, rather than psychoeducation. On this test, her scores began to increase during the first psychoeducational phase, but failed to reach statistically significant levels of improvement during this treatment phase. Her scores during the following attention skills training phase continued to increase and were statistically higher than her scores in the previous psychoeducation phase. Her scores leveled off during the final psychoeducation phase and were not significantly higher than the previous treatment phase.

Figure 5 shows the results of assessments of the severity of Subject B's symptoms. She showed a reduction in positive symptoms and global psychopathology, but not negative symptoms as assessed by the Positive and Negative Syndrome Scale. For example, she reported many mild, positive symptoms at the start of treatment and by the end of the six-month protocol denied the presence of any positive symptoms. Examination of the individual items on the Global Psychopathology Subscale of the PANSS reveals that she reported the largest reductions in somatic concerns, tension, poor attention, and motor retardation. These specific items showed a drop in at least two points on the PANSS scale (eg, from moderate to minimal symptoms). The reduction in these symptoms was not observed until the end of the six-month protocol. Figure 6 depicts the results on the Quality of Life Scale. On this measure, Subject B reported improvements in her intrapsychic foundations, such as an increased sense of purpose, motivation, and time utilization. Visual inspection of the data suggests that improvements were observed during *both* attention skills training and psychoeducational phases. Data were not available for the Attention Questionnaire.

Case Discussion.—Subject B appeared to make improvement in her attention to auditory stimuli and less consistently on the visual concentration measures. Similar to Subject A, her increased scores on the weekly neuropsychological assessment of attention represented not only statistically significant, but clinically meaningful improvements. Her performance on the Auditory Attention Test and Paced Auditory Serial Addition Test (PASAT) is a good example of the magnitude of her improvement. During the baseline phase she showed tremendous variability in her performance (at times demonstrating markedly impaired attention and at other times performing close to within normal limits). By the middle of the cognitive rehabilitation phase, she demonstrated 100% correct scores on both these tests. Anecdotally, Subject B reported being able to read once again, after many years of being frustrated by her inability to focus on written material. An informal follow-up evaluation suggested that these improvements were present at least nine months after the termination of treatment.

The observation that significant increases in her scores on two of six tests (Paced Serial Addition Test, Digit Span) occurred during the cognitive rehabilitation phase and not the psychoeducational phase is strong support for the hypothesis that attention skills training may be effective in reducing concentration deficits in this population. How-

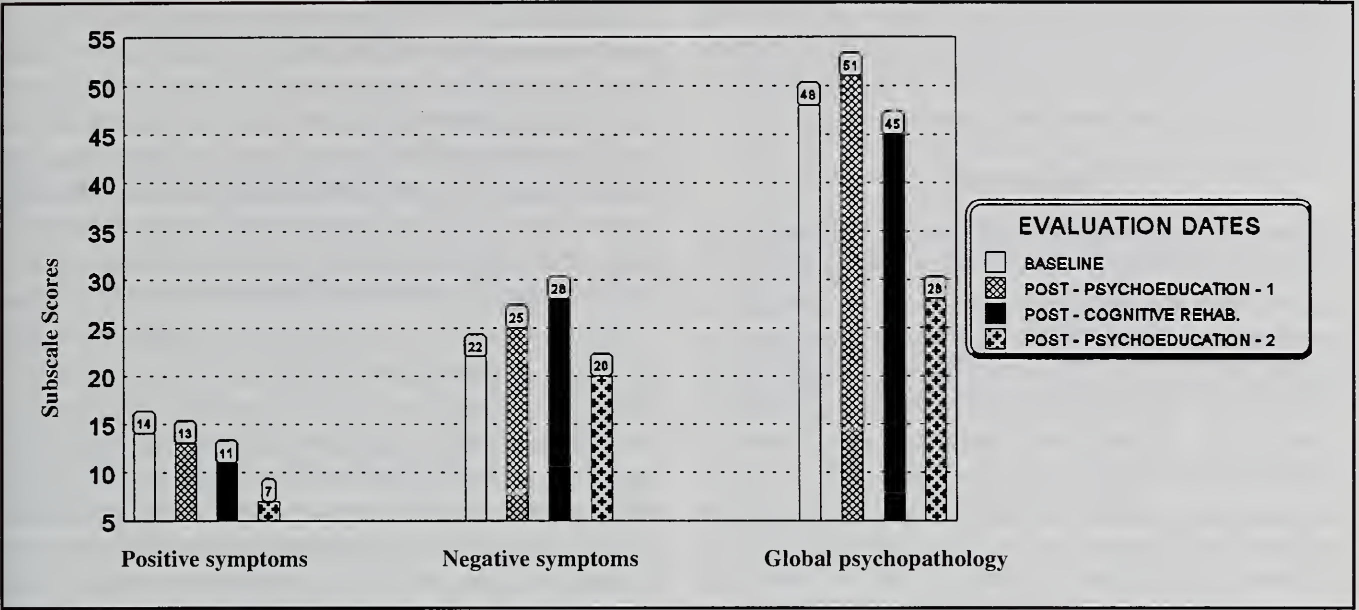


Figure 5.—Positive and negative syndrome scale—Subject B

ever, ceiling effects may have limited the ability to observe improvements during the final psychoeducational phase. It is important to note that her scores on the Continuous Performance Test showed a significant decline during the cognitive rehabilitation phase. The meaning of this decline is unclear. It may represent random extraneous factors, but suggests that the data should be interpreted cautiously.

While her pattern of scores suggests improvement from the cognitive rehabilitation, medication changes may in part be responsible. During the beginning of the first psychoeducational phase, she gained information on the newer atypical antipsychotics and requested a trial of Risperidone. Her psychiatrist started the patient on this agent shortly thereafter. The relative contribution of various factors (medication, cognitive rehabilitation, psychoeducation, and general stimulation) to her improvement can not be completely determined by this investigation. In addition, Subject B was highly anxious when starting the research protocol. Her increased scores may have been associated with decreased tension as she acclimated to the treatment environment. Therefore, her

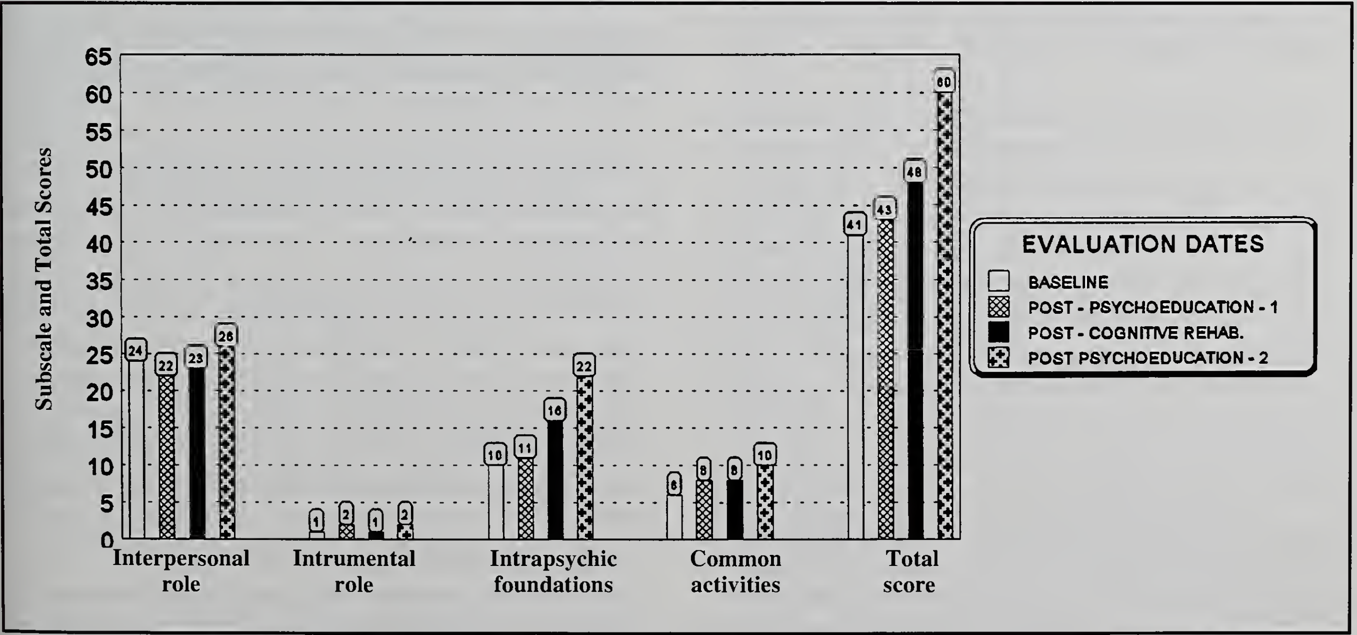


Figure 6.—Quality of life scale—Subject B

higher scores after several months in the program may have represented her native abilities when they were not diminished by anxiety, rather than reflecting improvements associated with cognitive rehabilitation.

Conclusions

These data suggest that some patients may benefit from the neuropsychological rehabilitation approach used in the Schizophrenia Rehabilitation Center, as seen in improved concentration, reduced symptomatology, and increased quality of life. The specific factors responsible for these improvements still need to be delineated. There is evidence that attention skills training using a process specific approach can produce improvements on neuropsychological measures of attention. While decreases on symptom rating scales and increases in quality of life indicators were also observed, the changes on these adaptive functioning measures may have been facilitated by either the cognitive rehabilitation or other treatments. Whether attention skills training is a necessary or sufficient condition for improved functioning still needs to be determined.

While the subjects improved on many of the neuropsychological measures, they did not demonstrate significant increases on all tests. More intensive exercises (ie, more hours/week) or longer treatment might produce more robust results or larger treatment effects. A longer duration of training may be needed to observe effects given the high degree of variability of performance typical in schizophrenia. In addition, some of the neuropsychological measures of attention may not be sensitive to the changes associated with cognitive rehabilitation. Future research might use physiological measures of cerebral function correlated with neuropsychological tests of attention as an outcome indicator (eg, cerebral blood flow measures).

The treatment outcomes associated with cognitive rehabilitation using a process approach and the interactions among multiple treatment variables need to be clarified. If treatment effects from a process specific approach to cognitive rehabilitation can be confirmed and replicated, it will still be necessary to document that these treatment effects are cost-effective compared to alternative therapies such as medication treatment alone or other assertive outreach programs. Nevertheless, Subject A's substantial improvement suggests that this treatment may be cost-effective. After almost two decades of dependency on disability benefits, he was ready to attempt work after six months of cognitive rehabilitation. Data are currently being collected to compare the outcomes of the neuropsychological rehabilitation in the Schizophrenia Rehabilitation Center to the less expensive standard partial hospitalization programs.

Furthermore, it is unknown if the improvements associated with cognitive rehabilitation will persist over time or decay once the training exercises are stopped. If a patient fails to maintain his increased performance, homework assignments or "booster shot" sessions (eg, the patient comes in for one week of training six months after termination) might be implemented to perpetuate their improvements. The ability of these interventions to stabilize or sustain the treatment effects needs to be evaluated.

Affective responses to attention skills training.—While the results of the original pilot study[26] and current protocols are promising, the rehabilitation techniques need to be applied cautiously. The potential for iatrogenic depression may exist for some patients. While none of the subjects treated in our laboratory experienced any significant decompensation or emergence of substantial major depressive disorders, some patients became more aware of their cognitive deficits. They at times expressed feelings of loss or grief when confronting their own limitations or struggles with simple tasks. Carefully designed rehabilitation procedures that provide the opportunity for success by giving patients training tasks that are not too difficult may avoid some of these reactions. However, depressive reactions to a disabling condition like schizophrenia may be a natural process in successfully adapting to the illness. Concurrent psychotherapy during the rehabilitation process or having trained psychotherapists administer the rehabilitation (rather than technicians) is advised.

Treatment responses specific to schizophrenia subtypes.—Some subtypes of schizophrenia may be more amenable to cognitive rehabilitation than others. Hogarty et al[25] suggested that rehabilitation in closed head injury has been more successful than with certain developmental disabilities, presumably because the traumatic brain injured patients have some intact intellectual abilities available for compensatory transfer of function. This may suggest that schizophrenia patients with good premorbid functioning or more intact cognitive skills have a greater likelihood of success, rather than those who show global impairment and/or poor premorbid abilities. While our current sample size limits conclusive statements, the patients with more global impairments (in both our pilot study and in these within subject designs) did appear to benefit from the training. While the globally impaired patients have less intact intellectual and interpersonal skills to build upon, they also have the greatest room for improvement. In addition, Olbrich and Mussgay suggest that cognitive rehabilitation with less acutely ill patients may result in more substantial improvements.[28]

Other patient characteristics may also be associated with a positive response to attention skills rehabilitation. From our experience, patients with intact verbal skills or

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primarily negative symptoms may be better candidates for attention skills training, while those with markedly loose associations or difficulty understanding the nature of the treatment may have a poorer response. Patients with narcissistic personality traits may be highly resistant to cognitive rehabilitation approaches, as compared to more dependent patients. Identifying individual patient characteristics that favor positive outcomes or contraindicate the use of cognitive rehabilitation will be useful in future clinical research.

Cognitive rehabilitation with other populations.—In addition to determining which patient characteristics predict treatment efficacy, there is also a need to see if these techniques can be applied to other populations. Attention skills rehabilitation might be applied to individuals at risk for the disorder.[20] Conceivably improving attention/cognitive abilities in children at risk might delay the onset of the illness or lessen its eventual severity. Furthermore, attention skills rehabilitation may prove effective for patients with bipolar disorder or depression, who also experience decreased concentration. These possibilities suggest that a broader application of attention skills training be investigated.

In summary, cognitive rehabilitation with schizophrenia patients may have helped some individuals improve their attentional skills and adaptive functioning. The further development and evaluation of neuropsychological rehabilitation with schizophrenia is needed, with the long-term goal of helping individuals acquire jobs, learn, create, relate, and find ways to gain satisfaction in their everyday lives.

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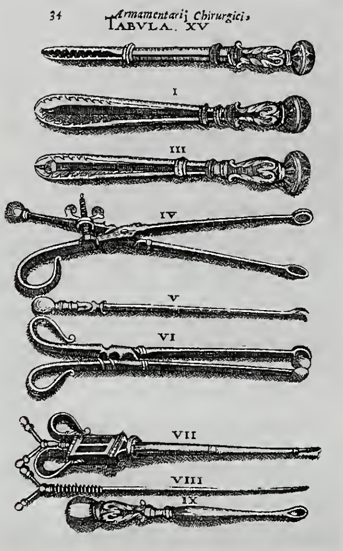

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Risk Management and Treatment of Sexual Disinhibition in Geriatric Patients

LESLIE M. LOTHSTEIN, Ph.D., JOANNA FOGG-WABERSKI, M.D.,
AND PATRICIA REYNOLDS, L.C.S.W.

ABSTRACT—*Background:* Upwards of 7% of cognitively impaired elderly are reported to exhibit sexually disinhibited behaviors. These behaviors may be the result of either a chronic history of sexual disinhibition, regression, or sequel to a stroke, surgical intervention, vascular insult, blow to the head, or cardiac event in which observed cognitive deterioration is the acute symptom. Elderly patients who are sexually disinhibited may exhibit a behavior that makes it difficult to manage them at home or in a nursing home.

***Methods*: A review of the treatment of sexual disinhibition with neurohormones is presented; guidelines for assessing risk and risk management are proposed; and a five-year study with 39 geriatric out patients with cognitive impairment and sexual disinhibitions reviewed. Case examples of sexual aggressives are followed by treatment recommendations in which an algorithm is presented.**

***Results:* The treatment algorithm recommends beginning selective serotonin reuptake inhibitors medication before considering estrogen (preferably a patch) or antiandrogen therapy. The estrogen patch led to excellent treatment results in elderly demented men with sexual disinhibition.**

***Conclusions:* Elderly demented patients who are sexually disinhibited may be managed successfully with neurohormones if SSRI medication proves unsuccessful.**

Introduction

SEXUAL Disinhibition.—The mean age of the population in the United States is increasing every year. It is estimated that by the year 2000 approximately 12.7% of the population will be elderly (the group 85 years and over is projected to be the fastest growing part of the elderly population, increasing 274% from 1969 to 1994).[1] One of the realities of aging is the increased likelihood of physical and mental illnesses and a high incidence and prevalence of dementia. In the psychiatric realm, estimates of the prevalence of severe dementia among individuals over 75 years of age in the general population range from 4.5% to 15% (depending on which cognitive measures are used to diagnosis dementia, in which population, and under what conditions).[2] Among the most seriously cognitively impaired elderly, 7% are reported to exhibit sexually disinhibited behaviors.[3,4] Sexual disinhibition in a geriatric population creates a special problem for caretakers. Moreover, with special reference to geriatric sex offenders, Johnson notes that "for sex offenders, geriatric offenders (over age 60) accounted for 1.7% of all reported 'forcible rapes' and 3.79% of all reported 'other sex offenses,' for a total of 5.5% of all reported sex crimes."[5] Johnson further notes that "elderly sex offenders are less likely to receive leniency in sentencing, resulting in an increased likelihood of incarceration and/or probation as opposed to a suspended sentence."[6] What is particularly distressing is that sexually inappropriate acting out behavior in the elderly which may result in incarceration is often caused by the onset of cortical dementia (eg, Alzheimer's

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disease), subcortical dementia (eg, Parkinson's disease, Huntington's disease), multiinfarct dementia, traumatic brain injury, frontal lobe syndrome, or temporal lobe syndrome.[1] A few studies have documented erotomania in women following the onset of senile dementia.[7,8] The relationship between cognitive impairment and sexual deviancy has also been the subject of several investigations in the nonelderly population.[9-11]

While some sexually disinhibited individuals have a chronic problem with sexual dyscontrol, the onset of sexual disinhibition (involving such diverse behaviors as hypersexuality, inappropriate sexual displays, touching, exhibitionism, and pedophilia) is often acute, with no prior history of sexual disinhibition. Other patients who have successfully controlled their sexually inappropriate behaviors over a lifetime may become regressed after the onset of a cognitive decline and exhibit behaviors they were previously able to repress.[12,13] That is, a medical or neurological disorder may activate a sexually aggressive behavioral pattern. Alternatively, a previous pattern of deviant sexual behavior may become reactivated as a result of a disease process.[14]

The onset of sexual disinhibition and aggression may follow a stroke, surgical intervention, vascular insult, blow to the head, or cardiac event in which observed cognitive deterioration is the acute symptom. An elderly individual's impulsive sexual behaviors may cause problems for the patient's children, friends, strangers, the legal system, and the caretakers. In many cases, elderly men who have become sexually disinhibited (secondary to a serious neurological disorder) may be arrested and incarcerated, bringing shame to an entire family. Some elderly individuals may have a life-long history of sexually disinhibited behaviors which have led to their arrest and/or incarceration. One study of 43 elderly sex offenders found that more that half had previous records of sexual offense.[156] These career sex offenders must be distinguished from the sexually disinhibited elderly men or women described in this paper. However, even career sex offenders may experience cognitive impairment (as a result of a disease process) which may potentiate their sexually deviant behavior. Whether an individual has an acute or chronic problem with sexual aggression, the diagnosis and treatment for sexual aggression is the same.[16-18] It would be therapeutically beneficial, and socially desirable, to have a standard of care available for the medical and psychological management of elderly demented patients who are sexually disinhibited and to provide alternatives to incarceration when necessary.

A review of the literature on the risk assessment, evaluation, treatment planning (risk management), and use of medications to treat sexual aggression and disinhibition in the elderly produced few studies (despite the reported 7% incidence rate, which could amount to over 125,524 patients per year by the year 2000).[19] Geriatric psychiatrists typically focus on the nonsexual symptomatic presentation of the cognitively impaired elderly. These symptoms include "agitation, anxiety, tension, irritability, phobic reactions, assaultiveness, disruptive or self injurious behaviors, hostility, uncooperativeness, excessive and confused walking through the wards, trying doors, tearing clothes, over talkativeness, loudness, repetitious mannerisms, wandering, sleep disturbances, aggressiveness, motor restlessness, and excitability."[20] There are many rating scales to measure the wide range of behavioral, social, emotional, somatic, and psychiatric symptoms. However, with rare exception, there is little mention in the literature of sexual aggression, disinhibition, and impulsivity.

Given the large numbers of serious cognitively impaired elderly who have impulsive-disinhibited processes secondary to cerebral injury and compromise (eg, traumatic brain injury and its sequelae), one might raise an objection to the lack of focus on sexual aggression in the cognitively impaired elderly. Indeed, a review of 31 studies by Cohen-Mansfield and Billig[4] revealed only three studies that included some mention of sexually inappropriate behaviors; two studies referenced undressing,[21,23] and one study mentioned exhibitionism.

The goals of this paper are to demonstrate 1) that sexual disinhibition among the elderly demented is a serious public health problem, 2) that such patients need to be evaluated, diagnosed, and treated, 3) that there are effective neurohormonal treatments, and 4) that the recognition that some forms of sexual deviancy are attributed to dementia may lead to a more humane way of addressing these problems, and 5) that the treatment for sexual aggression and disinhibition in the elderly should be multimodal, eclectic, and integrative. While "no treatment program for the wide range of sexual disorders should rely on pharmacotherapy alone to manage the complex dynamic and behavioral issues underlying paraphilic and nonparaphilic sexual disorders,"[24] there are some geriatric patients who are so cognitively impaired that psychopharmacological and neurohormonal interventions are the first line of treatment for their medical-psychological disorder of sexual aggression.

Taking a Sexual History

In working with the elderly patient who is cognitively impaired it is important to take a sexual history as part of the neuropsychiatric workup. Geropsychiatrists should take a formal psychosexual history and ask direct questions about sexual practices, arousal, orientation, and gender identity/role. Although questions of a sexual nature may be viewed as embarrassing, it is a necessary part of the evaluation process.[2]

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Psychobiological Models of Sex Offending Behavior

Many elderly patients have needs for intimacy and sexuality.[25] Kaplan stated that "the loss of sexuality is not an inevitable aspect of aging, and the majority of healthy people remain sexually active on a regular basis until advanced old age."[26(p185)] The Starr and Weiner report on sex and sexuality in the mature years concluded that over 70% of healthy 70-year-olds remain sexually active, and are having sex at least once a week.[27] These findings were supported by Spence who concluded that "the majority of healthy older persons remain sexually active and sexually capable throughout their later years."[16] Reviewing the Kinsey et al, reports,[28,29] the Master's and Johnson reports,[30,31] the Duke longitudinal studies,[32] the Starr-Weiner report,[17] and the Consumer Union Survey,[32] Kaplan concluded that healthy individuals remain sexually active "into the seventh decade and beyond."

Many healthy individuals who have a sexual dysfunction, or a sudden illness that compromises their sexual functioning, may remain sexually excited from a fantasy standpoint, but may be unable to achieve erection, ejaculation, or orgasm. These men may be vulnerable to sudden onset paraphilic behavior because of the activating role of sexual fantasy.[34-37] Clinicians who are able to take a good sexual history will be able to identify, and treat, a major sexual dysfunction before the onset of a paraphilia. One needs to address the risk factors for sexually offending behavior early in the diagnostic process. A good risk management program for these vulnerable elderly patients depends upon a comprehensive diagnostic assessment, including a sexual history.

Sex offending behavior may be related to sexual arousal that is either heightened and disinhibited or diminished and inhibited. Acute brain injury and cognitive impairment may lead to either hyper or hyposexuality (either of which may lead to sexually aggressive behavior). In addition, the prescribing of many drugs may have a negative effect on the aging brain. There are also important socioeconomic differences among elderly men, with those of lower socioeconomic status "unlikely to use alternative sexual practices useful for erectile dysfunction."[38] That is, men from lower socioeconomic classes are unlikely to substitute oral sex or masturbation for coitus and typically "the loss of erectile function suitable for coitus usually means the end of all heterosexual activity."[38] Some of these men may develop acute paraphilias, as there is evidence of an association between hyposexuality, inhibited orgasm, increased sexual interest, and resulting paraphilic disorders.[39] That is, elderly individuals with increased sexual interest and inhibited orgasm (a result of aging, traumatic brain injury, cognitive impairment, or medication effects) have been found to resort to paraphilic behaviors (especially fetishism and transvestism but also exhibitionism, frotteurism, fondling, and pedophilia). In one study on "Sexual Disorders in Huntington's Disease," it was argued that "paraphilias may have emerged in the face of increased sexual urges combined with difficulty reaching orgasm through conventional means."[39] Men especially vulnerable to paraphilic disorders include those whose physical illnesses, pharmacological regimen, or CNS disorder affect their sexual performance (that is, their arousal, erectile, and ejaculatory capability). Some of these men may develop paraphilias and be at high risk for arrest and incarceration secondary to their biopsychological illness.[40] Sex therapy interventions in elderly men with erectile and ejaculatory problems may prevent the development of paraphilias. Only accurate sexual history taking can assess the elderly patient's complex psychosexual status. Moreover, the elderly male with a sexual dysfunction and cognitive impairment may be at greater risk for engaging in a high risk contact- paraphilic disorder. Any evaluation of a male with a recent onset cognitive impairment should address the risk for a sexually aggressive paraphilic disorder. By taking a thorough sexual history and treating sexual dysfunctions in the "well" elderly aggressively one can potentially prevent sexually offending behavior.

Prentky and Burgess explain repetitive sexual aggression as part of a fantasy based traumatogenic model. They concluded that when sexual fantasy is paired with sexual arousal the result could also lead to deviant sexual behaviors such that "the deviant fantasy eventually becomes sufficiently reinforced and inhibitions sufficiently eroded, to place the individual at high risk to act on the fantasy."[23(p235)]

The aged patient may be more vulnerable to paraphilic behavior because of the effect of aging on the brain. Some elderly may become sexually disinhibited and become consumed by sexual fantasies (ie, a cognitive process that is normally under central inhibition) which may lead to inappropriate sexual behaviors.

Prentky and Burgess propose a psychobiological model to explain deviant sexual arousal and disinhibition which may lead to inappropriate sexual behaviors. This model includes reference to the following biological variables which interact with environmental, familial, and social factors: prenatal exposure to endogenous sex hormones; activated perceptual-motor memory; dominant hemispheric activation of a "script" for orgasm (affecting "the content of the fantasy, resulting in bizarre or deviant image"); the interacting effects of the temporal lobe and limbic system; neurochemical considerations (serotonergic and acetylcholinergic systems); and sex hormones (especially plasma testosterone levels).

We know that erection, ejaculation (lubrication in the female), and orgasm are also mediated (organized and activated) by complex neurohormonal, biological, and central nervous system variables.[44,42] The important role of the brain in organizing and activating human sexuality is not a matter of debate but a matter of which mechanisms are operative and under what conditions. For the elderly patient the effects of a dementing process on fantasy, neurohormonal processes, and CNS inhibitory systems has never been adequately studied.

As a working hypothesis we assume that, as result of illness and stress, the elderly person's normal inhibitory processes fail (in the context of a changing neurohormal milieu), and they are subject to disinhibition of sexual behaviors which may lead to a paraphilia. As part of the standard protocol for evaluating the high risk male group (diagnosed with a dementing disorder) we include the following: sexual history taking; a psychosexual risk assessment for patients who are already exhibiting paraphilic or nonparaphilic compulsive behaviors; and a specialized pharmacological assessment to address the individual's disinhibited sexual behaviors.

Clinical Issues in Using Neurohormones (and Other Drugs) for Hypersexuality

Neurohormones have been used in the treatment of arousal disorders (specifically hypersexuality) for approximately 30 years.[43] However, the use of neurohormones for the treatment of adult, nongeriatric, paraphilic offenders has usually been accompanied by psychotherapy.[44] In the treatment of elderly demented men in whom language and symbolism processes have been permanently damaged, a multimodal, eclectic, and integrative treatment approach may be undertaken only after the sexually offending behavior has been eliminated. The concurrence of aggressive outbursts, inappropriate sexual touching, and paraphilic behavior (exhibitionism, frotteurism, and pedophilia in men and erotomania in women) in a nonverbal, highly volatile patient requires, as a first line treatment, medication for symptom reduction.

Over the past 30 years a wide variety of drugs has been used to treat sexually deviant behaviors, including, but not limited to, neuroleptics, lithium, benzodiazepines, antidepressants, anxiolytics, and alcohol (which also increases disinhibition). With few exceptions, these treatments have failed to control hypersexual-aggressive behavior. With the introduction of antiandrogens, and estrogen patches, aggressive hypersexual behavior has been well managed.

More recently, the newer antidepressants (selective serotonin reuptake inhibitors, SSRIs) have shown promise in reducing paraphilic behaviors.[45,46] However, the neurohormones have the advantage of quicker response time, ease of measurement of physiological change in testosterone levels, and ease of administration (oral, injectible, and patch). Some of the untoward side effects of antiandrogens preclude their use in patients with thrombophlebitis, cerebrovascular disorders, pulmonary embolism, and retinal thrombosis. Additionally, one must be cautious in patients with a history of epilepsy, migraine, asthma, diabetes, or cardiac or renal dysfunction. Patients with any disease affecting testosterone production, or those patients undergoing cancer chemotherapy, need to be monitored carefully for risk. In those cases in which antiandrogens are contraindicated, the estrogen patch may be used. Risks with estrogen include thrombophlebitis, fluid retention, cancer of the breast, gynecomastia, kidney and gallbladder disease, hepatic adenomas, and hypercalcemia.

Review of Studies on the Neurohormonal Treatment of Compulsive Sex Disorders

A number of case reports have provided clinical advice about the treatment of sexual disinhibition in the elderly. Ross et al, described the antiandrogen treatment of public masturbation and exhibitionism in an elderly male patient who had a diagnoses of mental retardation and schizophrenia.[47] The patient was treated with medroxyprogesterone acetate (MPA) 200-400mg/week for two months. His aberrant sexual behavior remitted. Cooper reported on four cases of "institutionalized elderly men with dementia who were masturbating in public and making inappropriate sexual overtures to female residents." They could not be treated with conventional medications for these behaviors but were given MPA at 100 mg/day orally. Cooper reported that within "two weeks of starting the drug, the anomalous sexual behaviors had stopped (and) this was associated with a 90% reduction in serum testosterone."[48,49] Cooper argued that MPA "is safer than major tranquilizers … and should be considered as a first-line approach in the management of sexually disruptive behaviors in suitable patients with organic and functional disorders." Carrier reported a case of a 77-year-old widow who had an erotomania that a priest loved her. The patient was treated with a neuroleptic "but there was minimal response."[50] The reluctance to use neurohormones with women is not based on empirical studies. Weiner et al argued that "sexual aggression in male dementia patients responds poorly to behavioural management or to psychotropic drugs."[51] They argued that antiandrogen drugs are a first line of treatment for sexual aggression in elderly men having fewer side effects and documented reduction in sexual drive and sexually aggressive acts. They reported two cases. The first was a 72-year-old man with recent fondling of women, exhibitionism, and anal masturbation. While his aberrant sexual behavior increased after a recent head injury, he had a lifelong history of sexually inappropriate behavior including molestation of his 12-year-old stepdaughter and frequenting of prostitutes. He responded positively to 150 mg of MPA every two weeks. The second case was an 84-year-old man who was hyper-

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sexual (making sexual advances to female residents at the nursing home, fondling female staff and residents). He was treated with 200 mg of MPA and "his hypersexual behavior abated within two weeks."

Two elderly men with dementia who were physically and/or sexually aggressive were treated successfully with estrogen.[52] One man, a 92-year-old widower, exhibited "episodes of physical aggression (which) were frequently sexualized." He exposed his penis "into the face of a woman," "thrashed his body against her," "approached other women," and "took their hands and placed them on his body and penis." He responded to diethylstilbestrol, 1 mg/day initially, increased to 1 mg twice a day at the end of the second week. The side effects were discussed and it was concluded that "the use of small doses of estrogen in men is thought to be associated with a low side effect profile." The authors concluded that "it may be worthwhile to consider the use of estrogen to decrease physically aggressive behavior in a subgroup of elderly men with dementia who are refractory to or cannot receive other treatment for this behavior." The use of estrogen to treat refractory aggression after traumatic brain injury in a 32-year-old has also been reported.[53]

The Institute of Living's Program and Estrogen Treatment Recommendations

The Institue of Living (IOL) has a comprehensive treatment program for geriatric patients that includes the full spectrum of facility to nonfacility-based care. Services include home health care and a geriatric research program. Most of the elderly patients hospitalized at the IOL are very ill and may be at the end stage of a disease, having already been treated with multiple medications prior to inpatient admission. Most of the geriatric patients evaluated for sexually aggressive and assaultive behaviors received care in a number of settings, including nursing homes, transitional living programs, geriatric day treatment programs, and outpatient facilities. As part of their specialty consultation a thorough psychosocial and psychosexual evaluation is provided; a complete medical workup is done; and specialized psychosexual testing is completed (eg, including, but not limited to, the Derogatis Sexual Functioning Inventory, the Abel and Becker Cognition Scale, the Sexual Addiction Questionnaire, and the Sexual Dependency Scale).

Many of these geriatric patients have concurrent Axis I diagnoses (eg, affective disorders) and dual diagnoses (with alcoholism being the most common problem). The majority of patients are on a number of anxiolytic, antidepressant, neuroleptic, anticonvulsant, sedative, or thymoleptic medications. The average number of medications for psychiatric and medical illnesses is six. When a recommendation for antiandrogen or estrogen medications is made, the patient is screened to rule out medical disorders which are contraindications for these drugs.

Prior to recommending treatment with estrogen (or antiandrogens) each patient receives a full physical examination and screening for medical illnesses. Laboratory studies obtained include electrocardiogram, blood urea nitrogen, creatinine, electrolytes, liver function studies, complete blood count, thyroid function tests, and VDRL.

If estrogen is recommended patients are usually started on a patch at either 0.05mg or 0.1 mg. If estrogen is administered orally the dosage is 0.625 mg daily. Estrogen patches are placed on the patient's back so that they can not be removed easily. Some patients receive the drug orally. Prior to treatment the family is notified and enlisted in the treatment process.

The use of estrogen in the male has some risk. While breast cancer and gynecomastia in the male are extremely rare, there are some reports of breast cancer in men receiving estrogen.[54] All elderly men treated with estrogen must be followed for possible breast malignancy. The untoward side effects of estrogen therapy are well described in the gynecology literature, but there are limited data about the ill effects of antiandrogens and estrogen in men.

When estrogen is administered to men the major concerns are thrombophlebitis and thromboembolism. Geriatric patients are restricted in their mobility, and some are immobilized by the sedative effects of psychiatric medications. Consequently, these patients are at high risk for developing deep venous thrombosis and thromboembolic complications. Immediate vascular lab studies may be needed in some patients to rule out these disorders. On the positive side, estrogens may also be used prophylactically against atrophy of the aging brain.[59]

In the follow-up of patients treated with estrogen it is important to monitor their overall medical condition and to encourage walking or other regular exercise. Follow-up should be on a monthly basis, particularly for those patients sent home who are not under constant nursing observation. If a patient on an estrogen patch goes into the hospital for surgery the estrogen patch should be removed.

Sexually Aggressive Patients Treated at the IOL

Over the course of five years 39 geriatric outpatients with cognitive impairment were referred for a sexological evaluation and risk assessment. The age range was 61 to 81 with a mean age of 70. In order to better understand the nature of these patients they were divided into two subgroups according to age: those between 60 to 69 years of age (N=18) and those patients 70 years of age and older (N=21). The younger subgroup (Group A) had a mean age of 65 and the older subgroup (Group B) had a mean age of 75. Approximately half the patients in both subgroups were highly educated and were employed as either clergy, physicians, or lawyers. Seven members of the younger subgroup (38%) and 10 members of the older subgroup (48%) had diagnoses of cognitive impairment and dementia.

Two members of the younger subgroup (11%) and four members of the older subgroup (19%) admitted to having been sexually abused as children. Alcoholism did not appear to be a major issue for either subgroup (15% of the total), although the patients may have under reported their alcohol use.

Patients were involved in an array of sexually disinhibited, impulsive, provocative, and dangerous sexual behaviors. These behaviors included: collecting child pornography; incest (with male and female children and adolescents); boundary violations in one's professional practice (with men and women, children and teenagers, though the aging group had a large number of boundary violations); sexual aggression involving sadism; nonincest related offenses (with boys and girls: with the younger group having two patients who reported being involved with 38 and 100+ victims respectively); disturbances in one's masculine self concept (ie, not feeling like "real men" or "manly"); autoerotic asphyxiation, fondling, exhibitionism, masturbation, kissing, grabbing of body parts, having many affairs, being hyposexual, sexually aggressive, sexual boasting, and a variety of paraphilic and nonparaphilic sexually compulsive and addictive disorders including, but not limited to, voyeurism, cross dressing, cruising, obscene phone calls, prostitution, frotteurism, somnophilia, fondling, and urethral eroticism.

In terms of sexual abuse, two patients from the younger group reported being sexually abused by clergy, while patients in the older group reported being sexually abused by mother, adult males, or a teenager. Many of the patients reported erectile and ejaculatory disturbances (retrograde ejaculation, inhibited ejaculation), sexual anatomical problems, (undescended testicles, hydroceles), a penile implant, and worry about HIV infection. None of the patients tested positive for syphilis. When the data were broken down as to presence of dementia and sexual symptoms, there was no differentiation between the demented and nondemented groups. The presence of a dementia did not predict the type of sexual disinhibition that the patient exhibited. Table 1 suggests that there is no way to predict the type of sexual symptom according to the type of head injury (in either a younger or older group of selected geriatric patients.

Table 1.—Cognitive Impairment, Type of Head Injury and Sexual Symptoms in Two Aging Groups

	Cognitive impairment and type of injury	Sexual symptoms
Younger group (under 70)		
1.	Cortical atrophy, infarct	Exhibitionism
2.	Memory impairment	Affairs, incest with cousin
3.	Head injury	Obscene phone calls to children
4.	Cognitive impairment, right posterior abnormality	Pedophilia
5.	Vascular dementia, small vessel disease, CVA	Incest with daughter
6.	Head injury	Sexual assault of a female client
7.	Head injury—Coma	Assaulted 38 male children 12 to 14 years of age
Older group (over 70)		
1.	Cognitive decline	Sado-masochism, sexual urges to youth
2.	Cognitive impairment	Child pornography
3.	Right frontal abnormality	Chronic incest, grandsons
4.	Bilateral frontal abnormality	Sex with female patient
5.	Cognitive impairment	Fondling male children
6.	Transient ischemic attacks	Compulsive sexuality
7.	Cognitive impairment	Sex with boys, boundary violation
8.	Head injury myasthenia gravis	Sex with teenage boys
9.	Bilateral frontal abnormality	Ephebophilia (n=8) somnophilia
10.	Frontal lobe abnormality diffuse organicity	Sex addict, fondles females

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Case Examples of Sexual Aggressives

The following case material depicts the kinds of sexual disinhibition presented by sexually disinhibited men who were either inpatients or outpatients.

A 76-year-old nun was preoccupied with oral sex and believed that Mr. A came into her room and performed oral sex on her. She was preoccupied with Mr. A and believed that he loved her. Other patients were scared of her and confused by her overt sexual language and preoccupation.

Mr. G, an 87-year-old man was sitting in the emergency room waiting to be evaluated for a progressively deteriorating memory problem. His son and daughter-in-law, who were in their 60s, left him alone for a few minutes while they registered him. He was sitting next to a child and unzipped his fly, exposed himself, and began fondling the child. The child's mother called the police. Mr. G was arrested and charged with a sex crime.

Mr. D, a 77-year-old man with a chronic history of alcoholism who had recently lost of his wife of 40 years, was placed in a nursing home because of depression and cognitive impairment. He constantly grabbed female staff and asked for sex. At times, he grabbed other female patients and fondled them. He had poor boundaries and became aggressive when staff tried to reorient him away from female patients. He tried to get into a female patient's bed to have sex with her.

Mr. B a 76-year-old nursing home patient was referred for self-strangulating behavior. He used a bell cord or pillowcase to strangle himself and increase his arousal. This behavior was a variant of autoerotic asphyxiation. Self strangulation caused him to become sexually aroused, erect, and have a powerful ejaculation. The patient denied he was suicidal. He was wheelchair bound and had limited mobility. With increasing physical incapacity he was asking others to perform self-strangulation functions which he was becoming increasingly unable to perform on himself.

Mr. B had a history of assaultive behavior in that he attempted to strangle a female cousin when she was 11 and he was in his 20s. There was no substance abuse; but he had a diagnosis of dementia and severe hearing loss and was on multiple medications. He had a lifelong history of choking behavior beginning at age five when a teacher choked him as punishment and he became aroused and felt "wonderful." He described himself as heterosexual but never had intercourse with a woman as his primary arousal involved choking. After his mother's death he asked someone to choke him to death, as he was very depressed. Recently he had asked the nuns at his nursing home to choke him. His compulsive need to be choked in order to obtain sexual gratification posed serious problems for his caretakers. Mr. B was placed on an estrogen patch and his sexual requests for choking diminished. He was transferred to the nursing home and eventually choked himself to death.

Mr. M was a 75-year-old sexually assaultive and aggressive man who inappropriately fondled women, and publicly masturbated. He was on six different medications for his mental and physical illnesses, including trazadone and carbamazepine. His mental status revealed a mildly demented individual who was lonely and touched women when he felt aroused. He was unable to get an erection. There was evidence that he was sexually inappropriate and promiscuous during his marriage. He stated that he was sexually aroused every day and desired intimacy. He had difficulty remembering exactly what he did and with whom. He did not appear to have control over his behavior or to have insight into what impact he was having on others. He was started on an estrogen patch and his inappropriate fondling and touching behavior stopped within a week. His memory problems precluded using more conventional approaches to diminish his deviant sexual arousal.

Treatment issues varied widely for these patients. For example, many of the clergy were accused of sexually inappropriate behavior that went back an average of 15 years. For the past 10 years or more they had been sexually celibate. As a result of civil and criminal actions many of these men needed antidepressant and antianxiety medication to help them cope. They were not in need of drugs to curb their deviant sexual arousal. For those individuals who were hypersexual and sexually aggressive (and had difficulty controlling their sexually compulsive behaviors) a referral for antiandrogens or estrogen therapy was made. More recently, the SSRI drugs have emerged as a first line of psychopharmacology for the treatment of sexually disinhibited disorders (along with psychotherapy). While a few studies with geriatric patients have been reported it is still too early to conclude that SSRI drugs should be the treatment of choice for the demented elderly. However, for certain uncomplicated cases, elderly demented men with sexual disorders should be considered candidates for an SSRI. If that class of drugs fails the patients can be referred for antiandrogen or estrogen therapy.

Most of the patients presented with an adjustment disorder, intense shame, and humiliation which led to an anxiety state or sexual disinhibition secondary to a recent cognitive impairment. A combination of neuropsychiatric drugs and psychotherapy were employed in order to address their complex psychiatric disorders. In some cases attendance at self-help groups for sexually addictive and compulsive disorders was recommended.

With the advent of SSRI medications, antiandrogen and estrogen medications have been reserved for the most serious cases. Individuals provided antiandrogen medication were given Depo-Provera 200-500 mg intramuscularly. weekly for six months to three years. Weekly shots of Depo-Provera were used not only because of its clinical efficacy but also to assure that the patient had taken his medication. The estrogen patch was a particularly useful alternative for the elderly demented patient with serious medical illnesses and for sexually disinhibited patients with dementing processes that precluded the use of expressive therapies. The estrogen patch is unobtrusive and can be applied such that removal is difficult.

As a result of statutory regulations that allow victims to institute civil suits up to their 35th year, clinicians may be asked to do a sexual risk assessment on elderly patients who committed sex crimes decades ago. These patients may not need medication for their sexual disinhibition but for the psychiatric symptoms that follow such public disclosure.

Treatment Recommendations

The treatment for sexual aggression and disinhibition in the elderly should be multimodal, eclectic, and integrative involving psychotherapy and medication. The choice of how to proceed with treatment is made on the basis of clinical exigency and pragmatics. Patients on neurohormones need to understand the reason for the medication. If family members are involved they need to participate in the treatment.

As part of an algorithm (Fig. 1), treatment planning should begin with SSRI medication (or other drugs) before considering estrogen or antiandrogen therapy. Elderly patients who are candidates for an SSRI drug should be administered 1/4 to 1/2 the usual starting dose and stabilized on the lowest possible dose. If this medication trial fails, the neurohormones should be considered. However, one can make a change in the algorithm if necessary.

Estrogen therapy should be used if a patient is elderly, demented, and sexually aggressive (threatening assault of a child or a vulnerable adult); and the situation is acute and the patient is at risk for sexually acting out in a dangerous and disruptive way; is medication noncompliant and at risk for not taking medications; and is medically cleared for estrogen therapy. If the patient is likely to be noncompliant with the patch an estrogen patch should be placed on the patient's back where it cannot be removed by the patient. The usual estrogen patch dosage is 0.05 mg or 0.10 mg. If the patient is elderly and demented and engages in sexually aggressive acts that do not involve physical contact (eg, voyeurism, exhibitionism), and s/he is medically compliant, then oral estrogen may be administered, at 0.625 mg every day.

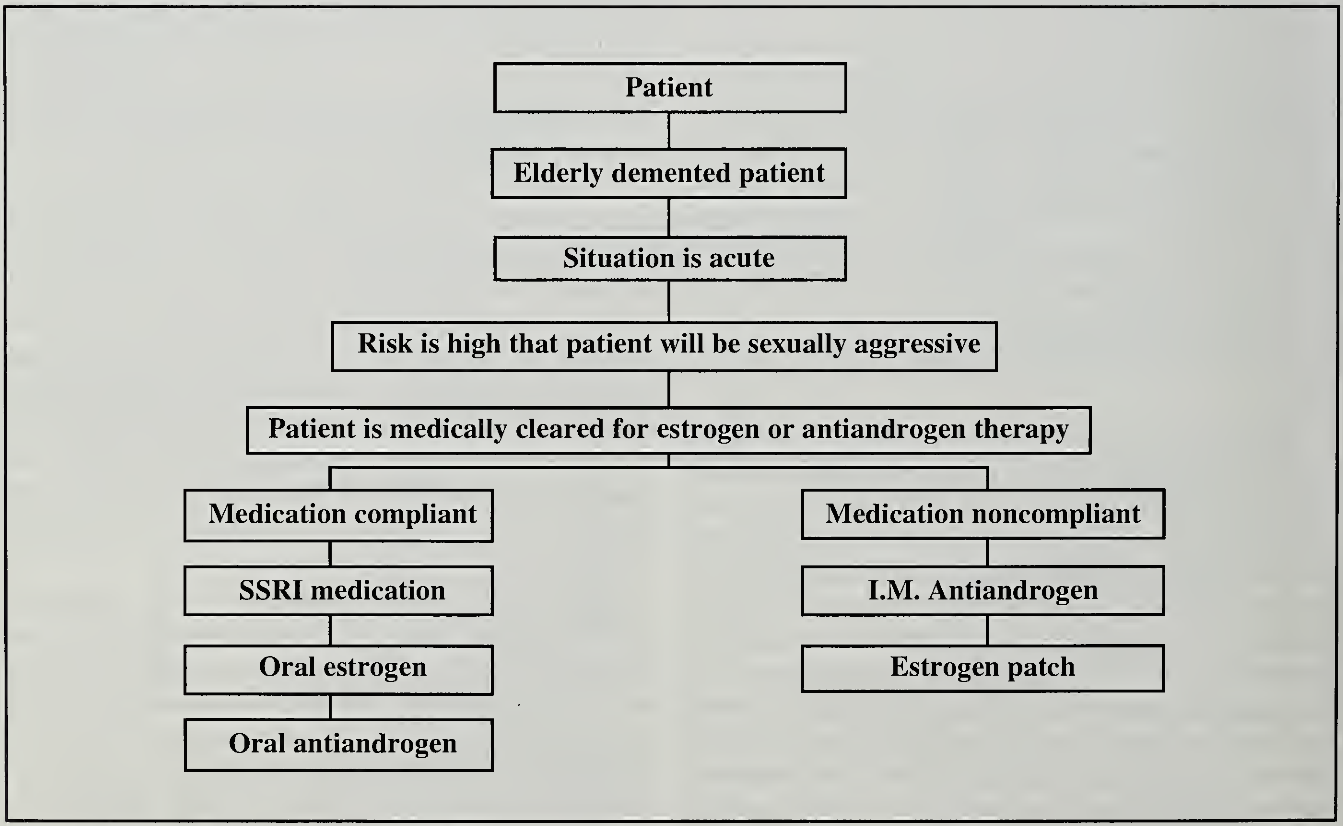

Figure 1.—Algorithm for treatment planning.

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The choice of an antiandrogen therapy versus SSRI therapy is made on the basis of a number of factors, not the least of which is how rapidly one needs to resolve an urgent situation. Antiandrogen therapy should be initiated if the following conditions hold: the elderly patient is demented, chronically sexually aggressive and physically assaultive, the situation is acute (but the patient has a chronic history of sexual aggression and disinhibition), he is at risk for sexual acting out in a dangerous and disruptive way, and is medically cleared for antiandrogen therapy (and estrogen therapy is medically contraindicated or too slow acting) .

Oral preparations of Depo-Provera (or another suitable antiandrogen, eg, Lupron) may be initiated at the lowest possible dose[55] if the following conditions hold: the situation is acute; the sexual aggression is relatively harmless; and the patient is medication and treatment compliant. If the situation is dangerous and the patient is medication and treatment noncompliant then weekly injections of Depo-Provera should begin at 100 mg and increased steadily until a therapeutic dose is reached (that is, the serum testosterone level is below 100 ng/dL and the patient is no longer acting out sexually). Prior to the administration of Depo-Provera a base line of serum testosterone, prolactin, luteinizing hormone and follicle-stimulating hormone should be established.

Results and Discussion

Elderly demented men (and some women) who are sexually aggressive and disinhibited may benefit from a number of interventions (psychopharmacologic and psychotherapeutic) including the use of estrogen therapy. In order to provide an appropriate psychiatric standard of care for the rapidly growing elderly population, clinicians must talk to their patients about their sexuality and psychosexual development. A good psychiatric interview should include a full psychosexual assessment and sexual history. We propose a number of treatment strategies involving the use of estrogens, antiandrogens, and SSRI medications to treat sexual aggression in elderly demented individuals. All but one of the patients in our sample of 39 treated with estrogen therapy showed a marked improvement in symptoms.

Most of the patients treated had severe psychopathology, multiple chronic illnesses, and were on a variety of medications to treat their physical and mental illnesses. Issues of drug interactions and a variety of psychosocial therapies made it difficult to determine which interventions were most effective in reducing the threat of sexually aggressive behaviors. In our view, however, the patients' sexually aggressive behaviors ceased only after the initiation of neuroendocrine therapies (estrogen or antiandrogen therapies).

The elderly demented patient who is sexually disinhibited and aggressive poses a serious management problem. Often what begins as a nuisance behavior can quickly escalate to a dangerous and potentially legally compromising situation. Although the mechanism of action of estrogen and antiandrogens (and the SSRI drugs) with regard to how they alter cognitive processes remains unknown, the data suggest that these drugs are effective in diminishing and/or controlling sexual aggression. Withholding effective treatments can have serious medical-legal consequences for the individual, the family, the victim, and society at large.

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Commentaries

Informed Consumer Participation in Managed Medicare

The rapid evolution of managed care in the wake of the Clinton administration's failed health reforms has captured the attention of policymakers, health professionals, researchers, consumers, and advocates alike. As capitated models steadily expand into the major publicly-financed insurance programs (Medicaid and Medicare), observers have expressed a number of concerns about the implications of these models for access to treatment, quality of care, clinical outcomes, and patient satisfaction.[1-3] In a society strongly oriented towards principles of autonomy, self-determination, and consumerism, issues of informed consent and substantive participation in health-care decisions are paramount. One of the central challenges is the assurance of informed patient choice within such systems, an issue of importance to the general subscriber community, more so for vulnerable older adults, and particularly critical in the specific area of mental health services.

This commentary discusses the primary barriers to informed patient choice found in current models of managed Medicare. Challenges include: limited knowledge among beneficiaries in both traditional and managed Medicare programs, lack of consensus regarding the nature and extent of information which should be provided to prospective and current subscribers, complex federal and state regulations governing marketing and education practices, and cognitive and functional characteristics of older patient populations. Each of these potential impediments to fully informed participation of subscribers in managed Medicare warrants careful investigation as pressures to enroll older adults intensify.

Current Knowledge Regarding Medicare

The current state of knowledge of Medicare benefits among beneficiaries serves as a framework for assessing their level of awareness of managed-care environments. Since the program's inception in 1965, beneficiary knowledge of Medicare benefits and procedures has been limited. The development of supplemental Medicare policies (Medigap) during the 1980s further complicated coverage and purchasing decisions. In response to the widespread misunderstanding of Medigap insurance, the federal government required insurers to design policies that conform to one of 10 uniform benefit packages (OBRA 1990). There is some evidence that simplification of Medigap policies improved the quality and clarity of information provided to consumers.[4] However, Medicare HMOs are not required to offer standard benefit packages and, in fact, are quite heterogeneous. Will such variability in products act as a barrier to effective communication between insurance carriers and subscribers?

Nature and Extent of Information Provided to Patients

There is no consensus about the nature and extent of information to share with potential purchasers or current managed care enrollees. Further, data regarding health-care quality and participant satisfaction within managed care organizations (MCOs) are quite limited. Substantial concerns about misleading or inaccurate information led to the Health Care Financing Administration's (HCFA) development of strict standards around marketing strategies. Despite protections against inappropriate sales approaches, potential subscribers may be overwhelmed with incomprehensible information regarding coverage, limitations, exclusions, preauthorizations, and more. Although the role of MCOs in patient education has been little studied, there are data indicating that utilization review organizations specializing in mental health are less likely to conduct patient education than their general medical counterparts.[5]

Recognizing the complexity of purchasing decisions, a number of advocacy organizations (AARP, statewide Area Agencies on Aging) have developed objective, clearly written, consumer-oriented materials. Health-care providers have taken the initiative to disseminate informational brochures (such as those by the Connecticut State Medical Society) and to publicize consumer rights (for example, the Mental Health Bill of Rights Project, A Joint Initiative of Mental Health Professional Organizations).

Of course, issues of quality are critical to informed enrollment decisions. In an effort to develop measures of quality, a number of approaches to monitoring MCO performance have been developed. The most visible program is the Health Plan and Employer Data Set (HEDIS 3.0), developed through collaboration among health plans, purchasers, and providers. HEDIS 3.0 measures eight domains of plan performance. Although HEDIS offers a reasonable base from which to develop more sophisticated measures of quality, it has been criticized as suffering from a number of limitations, and it is unclear what role the data generated from the tool can actually play in assisting consumers in choosing reliable plans.

Even assuming a consumer is able to navigate systems, obtain, understand, and process information about the various MCOs and make a sound choice of a provider, an equally substantial challenge exists at the point of accessing benefits. Managed care models rely on the MCO to provide subscribers with full information regarding denial of a claim or treatment request. A virtual labyrinth of remedy mechanisms has been created with the goal of protecting the consumer (local Social Security offices, Medicare intermediaries, Peer Review Organizations, state insurance commissions, Area Agencies on Aging). The U.S. Office of the Inspector General (OIG) and HCFA jointly issued an advisory bulletin to inform consumers of their rights when joining a Medicare HMO.[6] Toll free hotlines have been installed at HCFA and OIG to assist in resolving complaints if the HMO fails to meet its obligations or violates beneficiary rights.

Despite the scope of these safeguards, a recent Federal District Court decision found such government efforts to clarify appeals procedures for subscribers inadequate, and ordered the Department of Health and Human Services to develop comprehensive regulations by 1 July 1997. The ruling issued for a nationwide class-action lawsuit, *Grijalva v Shalala*[7] ordered Medicare HMOs to provide written notice of denial or limitation of benefits within five days of a request for services, and at least one working day in advance of termination of services. The ruling also stresses the need for HMOs to furnish each Medicare enrollee with information using "lay language" that addresses core content areas, including the decision to deny care, appeals processes (routine and expedited), and the evidentiary standards incumbent upon the HMO when a beneficiary appeals a decision. This proliferation of such protections reflects the magnitude of concerns regarding the potential for impingement on subscriber rights. The Department of Health and Human Services has reported that over one half of HMOs audited for compliance with Federal rules for appeals and grievances have been found deficient in some way.[7]

In the broader context of health reform and in an effort to facilitate true consumerism in the marketplace, informational tools known as "report cards" are becoming increasingly common. In a 1994 study, the GAO offered several caveats regarding the widespread use of report cards as a mechanism for health care consumers: 1) they may be based on inaccurate, misleading, or incomplete information, 2) they are prepared by various stakeholders and accordingly may be less than objective, 3) selected measures may not reflect "quality," 4) there are no standardized or validated formulas for calculating results.[8]

As the AMA Council on Ethical and Judicial Affairs[9] noted, consumers also share a responsibility to become sufficiently informed both to execute thoughtful decisions regarding enrollment and to assert their rights to coverage once enrolled. Although a myriad of informational resources exist and more are being developed, are consumers aware of or interested in accessing such resources?

Regulatory Mandates for Informed Choice

Federal and state governments have vigorously pursued regulatory strategies to enhance consumer protection as Medicare beneficiaries transition into managed care models. At both federal and state levels, there have been a number of legislative responses to concerns about the potential for limited or misleading information directed at subscribers. Federal guidelines pertaining to marketing and information dissemination are described in HMO/CMP Manual, HCFA Audit Guide, and Code of Federal Regulations (42 CFR 417.428 (a)(1) and 42 CFR 417.436 (a) and (b). In Connecticut, pending House Bill 6883 contains consumer information and confidentiality provisions which, if passed as written, would arguably be among the strongest managed-care consumer protection rights in the nation. The regulations require disclosure of a comprehensive spectrum of 23 categories of information such as: plan coverage, financial arrangements which might restrict referral or limit services offered, preauthorization and utilization review standards, and rules for in and out of network care. Managed care plan's enrollment agreement "shall be in writing in at least 12 point type, written clearly, simply and at a basic reading level."

The voice of advocacy and provider groups has been equally strong, as evidenced by the Joint Initiative of Mental Health Professional Organizations and the AMA Council on Ethical and Judicial Affairs. These organizations, among others, urge that MCOs be required to adhere to principles of informed consent and conduct full disclosure of relevant information, including limitations or restrictions and treatment alternatives.

The impact of regulations in shaping MCO practices and consumer behavior is unknown. Some have questioned whether regulations will be substantively enforced. In the absence of empirical evaluative data, is there sufficient reason to believe current mandates and protections are effective?

Considerations Regarding Vulnerable Populations

Those interested in the implications of managed Medicare models for the realm of mental health services raise two concerns. First, issues of access and utilization are critical.[1] Second, unique ethical challenges which derive from the vulnerable nature of older adults with mental illnesses demand special consideration. Access to mental health services for older adults may be constrained by the negative consequences of both age-based rationing and

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mental health underreferral, further compounded by cost containment incentives to undertreat.[3] Recent indications that providers (particularly physicians) may be encouraged to withhold information about financial arrangements or expensive care options have raised serious concerns about managed care, both generally and in the mental health arena. The AMA has included in its Code of Medical Ethics a requirement that physicians disclose financial incentives, and inform patients of all treatment options, even those not covered under the plan.[10,11]

One of the most compelling ethical issues is the potential for inappropriate treatment of vulnerable populations (chronically ill older adults, those with mental illness and possibly impaired judgment, those without surrogates) in evolving capitated delivery systems.[12] It is essential that these populations gain access to well-functioning plans which demonstrate the capacity to respond effectively to their highly variable and fluctuating needs. Yet MCOs have reason to expect certain more vulnerable groups to fare less well in capitated systems; such patients are often difficult to manage over time, may require intensive resources, and may not experience measurable or sustained improvement in function. Data from the Medical Outcomes Study suggest frail, depressed, or chronically ill older adults have significantly worse functional outcomes in managed care than similar patients in traditional programs.[13] Managed care models assume that certain responsibilities will be carried out by enrollees; persons with severe mental illness may not be capable of effectively fulfilling such responsibilities.[14] In this population, the frequent involvement of family members or surrogates in decision making also adds a layer of complexity to the tasks of information sharing and participation in treatment decisions.

These concerns have been echoed by practitioners in the mental health arena. In a rare consensus statement, the Mental Health Bill of Rights Project (representing over 600,000 mental health professionals), declared as one of their major principles the notion that patients have a right to full information about a managed care plan. The National Managed Care Consortium developed a similar bill of rights for those using mental health services. Are there sufficient standards to ensure just treatment of these vulnerable populations in the managed care world?

Concluding Comments

Provider, regulatory, and advocacy communities have expressed great interest in the implications of managed Medicare for informed consumer participation. Though empirical research in this area is limited, the courts have demonstrated that they will not wait for research results to act to protect consumers' rights. As increasing numbers of older adults are enrolled in managed Medicare, efforts must be directed toward identifying systematic barriers to informed choice, as well as evaluating the effects of existing approaches. Only then can we achieve an appropriate balance among the shared responsibilities of MCOs, subscribers, and the government to ensure meaningful patient participation in managed health-care systems.

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Psychotherapy and Psychiatry: A Partnership for the Future

Ten years ago, few psychiatrists could have envisioned their field without psychotherapy being a central aspect of clinical practice. Today, many psychiatrists wonder if psychotherapy will have any place at all in their work, and leaders in the field take diametrically opposing views.[1–5] The place of psychotherapy in psychiatry not only will determine future treatment. It will also influence the way in which our society views mental illness, what kinds of research will be envisioned, and whether or not medicine can move towards a more integrated approach to mind, brain, and body.

The history of psychiatry in the latter half of the 20th Century has moved from a "mind" paradigm, primarily represented by psychotherapy and psychoanalysis, to a "brain" paradigm, primarily represented by psychopharmacology and neuroscience. American psychiatry changed and expanded dramatically during the generation following World War II with the influx of psychoanalysts from Europe. Analytic theory focused on drives, development, and the influence of early life experiences. Unconscious conflicts were considered pathogenic, with insight into one's inner life as the route to cure. Overt symptoms were seen as the external expression of the true disorder. Hence, medication and other somatic treatments were seen to be superficial and palliative, although sometimes necessary, and had little status. The neuroses, traumatic experiences, and some character disorders were the dominant psychopathologic entities that responded to this approach. Psychoanalytically informed treatments were increasingly applied to a wide range of psychopathology including schizophrenia and severe character disorders, with questionable effectiveness and high cost. The prevailing mode of treatment was a private practice model in which patients were seen individually over a period of months to many years.

The community mental health movement of the late 1960s utilized psychotherapists with varying levels and types of training, often in conjunction with medications prescribed by psychiatrists. Psychotherapy became more generally accepted. It was supported by the lay press and was utilized by the American public for an ever-widening set of problems. The number of clinical psychologists and social workers expanded exponentially, and many other mental health workers, often with inadequate training, entered the field. The only thing that seemed to differentiate psychiatrists from any other practitioner was that they also, as physicians, prescribed medications. There was considerable confusion concerning who could practice psychotherapy, what the treatment was, and what problems would respond to this treatment. In addition to these competitive marketplace issues, there was a profound shift within academic psychiatry towards a belief in biology and neuroscience rather than psychoanalysis as providing answers to the multiple questions concerning mental illness and treatment. A more reliable phenomenologically based nosology linked to psychopharmacologic therapies was sought.[6] An increasing insistence on proving treatment efficacy through randomized, double-blind clinical trials further disconnected psychotherapy from psychiatry. The costs and design problems in psychotherapy research limited studies to brief and symptom-focused treatments. Some research suggested that psychiatrists were no more effective psychotherapists than practitioners from any other discipline, although these studies were never designed adequately to test this issue. The complex interplay between medication and psychotherapy has yet to be fully explored.

Today, psychiatry is in the midst of a dramatic expansion of its knowledge base. Diagnosis, psychopharmacology, and clinical research are increasingly resonating with advances in neuroscience. Psychotherapy technique and outcomes research are also advancing. At the same time, cost control dominates almost every decision concerning treatment in public, private, and academic domains. The combination of cutting health-care costs and maintaining a health system that purports to offer the same treatment for all citizens has led psychiatry to seek time efficient, least costly treatment approaches with proven clinical efficacy. A short-term, symptom-relief intervention has become the standard. Psychiatry now defines its primary clinical mission as the treatment of patients with major mental illness, including schizophrenia, bipolar illness, major depression, and severe character disorders. The use of psychotherapy in the treatment of these conditions is well established but needs further development.

The expansion within psychiatry, the shift to biology and more concrete, testable outcomes, together with profound cost-consciousness and an exponential expansion of mental health practitioners has raised serious questions about the practice of psychotherapy by psychiatrists. A current position is that psychiatrists should diagnose and treat diseases of the brain that are linked to psychiatric illnesses. Psychotherapy should be carefully prescribed when indicated by nationally approved treatment guidelines and provided by mental health workers trained in manual-based (standardized) approaches. Psychiatrists should not provide psychotherapy since it is too labor intensive (eg, costly), and no research proves that psychiatrists are more effective psychotherapists than other mental health professionals.[1,2]

There is logic to this line of reasoning. There are, however, very compelling reasons to maintain psychotherapy as part of the clinical expertise of psychiatrists.

The field must maintain an integrated and multifaceted approach to the understanding and treatment of human behavior and mental illness. The "nature/nurture" controversy and split between mind, brain, and body are still very much with us, in spite of increasing evidence for an integrated model.[5,7] It remains difficult for many to be open to ambiguities, complexities, and multiple etiologies. The current psychiatric research findings concerning neurotransmitter abnormalities leads, for example, to the limited conclusion that mental illness is a "neurochemical imbalance." Schizophrenia then becomes a disease caused by problems in brain chemistry and its treatment focuses on the chemical regulation of the brain. The problem with this approach is that it addresses one aspect of a much more complicated set of challenges that accompany mental illness. While we will certainly increase our knowledge of the biological factors that underlie certain psychiatric illnesses, the treatment of people who have these illnesses must continue to include a variety of other perspectives. These include the patient's response to illness and the multiple social and psychological consequences that are connected with it. Sophisticated knowledge of psychotherapy and its applications to the clinical management of patients with mental illness is a necessary competency. It enables psychiatrists to help patients with both acceptance and denial of illness, compliance and active participation in treatment, and adapting to ongoing stress, exacerbations, and limitations.

The role of physicians as professionals who treat people with illnesses as opposed to technicians whose object of study and treatment are pathological tissues, cuts to the core of one of the most fundamental issues facing medicine today. If American psychiatry continues on the path towards seeing its mission as treating the diseased brain and excludes expertise about and treatment of patients with illness, then the field will abdicate its leadership role in the science and art of the physician-patient relationship. Physicians must certainly share the healing role with other professionals, but they abandon it at everyone's peril. Psychiatry can be a leader, given its knowledge and focus on the person and the physician-patient relationship, only if it maintains a foundation in human psychology.

There are a number of other reasons to maintain psychotherapy within psychiatry. Psychotherapy is effective in a wide variety of circumstances.[5] For example, there are many patients who do not respond to medication. There are also a number of disorders that do not respond to somatic interventions and are best treated by psychotherapy. Even when medication is indicated, psychotherapy has consistently been demonstrated to augment and increase efficiency and efficacy.[5] In other clinical situations it is not possible neatly to separate psychotherapeutic and psychopharmacologic management. Here, splitting the treatment between a psychiatrist and another mental health practitioner who provides psychotherapy is not in the best interest of the patient, and may be even more costly to the health system. Some of the most difficult psychopharmacologic management issues often involve patient compliance and psychological factors. A related issue is that patients often hide or obscure symptoms and ideas that can be vitally important to their treatment, and psychotherapy skills are necessary to help elicit them. Also, psychiatrists are increasingly being called upon to work with other professionals and physicians in other specialties, dealing not only with the specific treatment of an illness, but complex systems issues (which is often a code word for difficulties between people) as well. These situations are experienced on a regular basis by psychiatrists. Thus, knowledge about psychotherapy and its applications must be maintained if psychiatrists are to provide quality patient care and consultation to other health professionals.

To provide adequate treatment, psychiatrists must be adept at working at both the psychological and interpersonal levels, a skill that requires much more than common sense and tactfulness. In addition, psychiatrists cannot be respected leaders in mental health planning and treatment if their only area of expertise is symptom-based diagnosis and pharmacotherapy. They must be able to recognize and work with the multiple psychosocial complexities that are part of the daily work with the mentally ill. This includes work with patients and colleagues as well as an awareness of the impact of administrative and health systems issues that are increasingly part of clinical care. Confidentiality, continuity of care, and the healing connection with another human being are all profound and complex issues that have never been more in jeopardy within medicine. Psychiatry can be a significant contributor to the evolution of ethics, humanism, and boundary issues only if it maintains expertise in the doctor-patient relationship.

Psychiatric research will be constricted in the future if it is confined to pharmacology and neuroscience. The polarization and competition between biology and psychology is man-made and not in the interest of good science. In fact, psychotherapy (and its link to biology) is receiving some of its greatest scientific support through research in developmental neurobiology and areas in neuroscience that are beginning to demonstrate links between brain and experience.[7] Dr. Gabbard writes about this elsewhere in this journal. Psychiatry is the clinical discipline that can maintain, value, and promote new knowledge in all of these areas as well as look to advances within science that can be utilized in treatment.

Psychotherapy research has advanced considerably over the past decade in spite of relatively minimal funding compared to research in psychopharmacology and neuroscience. Multiple studies conclusively attest to the efficacy of psychotherapy in a broad variety of conditions.[5] Because of cost and design complexities, there is little research to date on longer-term treatments and there are many important questions that remain to be investigated through controlled clinical trials. A number of these relate to the essential components and nature of the healing relationship and the therapeutic action of different types of psychotherapy. Such issues as motivation and the ability of a patient to utilize a particular kind of psychotherapy are also extremely important as is the question of whether or not psychotherapy performed by psychiatrists is different in kind and efficacy from that performed by other mental health professionals. These questions are difficult to answer in controlled research since it is often impossible to separate the effects of pharmacotherapy from psychotherapy in clinical settings. In practice, decisions about medication are frequently based on the dynamic interplay of the patient's evolving symptoms and the process of treatment, further supporting the need for psychiatrists to be adept at both pharmacotherapy and psychotherapy. The term "medical psychotherapy" means that the psychiatrist performs psychotherapy within a complex of knowledge, attitudes, and skills derived from medical, psychosocial, and psychopharmacologic perspectives of the patient. It is the interplay of all these factors that leads to optimal treatment.

Cost factors are currently one of the most powerful influences on the choice of treatment and the level of professional training of the therapist. This trend is present in all of medicine. Psychiatrists' time is expensive; psychotherapy takes time. Hence, utilization of psychotherapy performed by psychiatrists has become a carefully monitored procedure. There is no question that the mental health system needs to determine the most efficacious way to choose the type and degree of psychotherapy required, as well as who can provide treatment in the most cost-efficient manner. In many and perhaps most circumstances the psychotherapy component of treatment will be performed by professionals other than psychiatrists. The cost of a psychiatrist's time must not be used as a rationale for eliminating the practice of psychotherapy by psychiatrists, however. Controlled research as well as informed consensus need to determine these choices, not managed-care administrators or psychiatrists who have a constricted view of the field.

Psychiatry, the youngest medical discipline, has received great gifts in this century from psychology and social science as well as from pharmacology and the biological sciences. Our patients can increasingly benefit if the profession can integrate and collaborate from within and oppose external dominance driven by nearsighted cost control, bureaucracy, and power politics. It must not be a guild battle among mental health professionals driven only by the need for the least costly treatment, the fear of loss of numbers within any one discipline, or the belief that one point of view is best. Such a course would be detrimental to our patients, the health of our nation, and the advancement of medical science. Psychiatry is on the brink, both clinically and scientifically, of realizing its potential as a biopsychosocial discipline. It must maintain its foundation in psychotherapy if this potential is to be fulfilled.

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50 Years Ago

From *The Connecticut State Medical Journal*

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Editorials

War Neuroses

Brigadier General William C. Menniger, MC—AUS, speaking at the Graduate Fortnight of the New York Academy of Medicine in October 1945, remarked that one might generalize by saying that if the patient has made an attempt to fit into his civilian situation and is consciously aware of his symptoms, is preoccupied with his traumatic experiences in the Army, has recurring disturbing dreams, the chances are that he should see a psychiatrist. In the Army, we have found that psychotherapy under sedation is a valuable short-cut to relieve the pent-up emotion. Hypnosis has also proven to be an effective therapeutic tool for this purpose. In both of these types of treatment, the ultimate success depends upon the skill and the knowledge of the psychotherapist.

On the other hand, if the patient is exhibiting minor evidences of anxiety in the form of restlessness, minor physical complaints or problems of adjustment to the people around him, it is very likely that the general practitioner can and should help meet these problems. In so doing, he needs to appreciate that sometimes he can help directly by merely being a good listener and pointing out the inconsistencies, the discrepancies in the man's thinking and feeling processes. Very often he can make positive suggestions with regard to the manipulation of the environment. If one could insure sufficient family affection, economic and social security, easily accessible ego gratifications and good physical health, many of these veterans would be helped if not entirely rehabilitated.

When one takes into consideration the fact that 315,000 soldiers have been discharged from the Army for neuropsychiatric reasons, he may grasp the importance of this problem as a postwar challenge to medicine. It is to be hoped that all physicians will prepare themselves to accept and to treat what the Army medical officers discovered were among their biggest problems—the emotional factors in the production of illness.

Detention of Mentally Ill Persons

At the recent 1947 session of the Connecticut General Assembly, which ended in June, several significant changes were made in the law affecting commitment of the mentally ill, published on page 773 of this issue (*Conn Med* 1947; 9:733).

Perhaps the first important change concerns Public Act Number 254 and provides for repeal of 676c of the 1935 supplement entitled *"Detention of Violently Insane Persons."* This has been retitled *"An Act Concerning the Detention of Mentally Ill Persons."* This change in terminology is significant of the new approach to the whole problem and is characterized by other changes noted below.

Here are some of the other noteworthy features of the act as revised by the Legislature:

1. Where a person has been admitted into a hospital on an emergency certificate and an application for his commitment has been made to the Probate Court, he may be detained in the hospital beyond the thirty day period until a decision is rendered by the Probate Court as to his mental status. (The new features here is the provision for detention beyond the thirty day period.)

2. The new law does not specifically require that the emergency certificate be sworn to by the physician who issues it. It must, however, contain a description of the patient's mental and physical condition and as much of the history as is known, and must state that the person is in need of immediate care in a hospital for mental illness.

3. Prior to hospitalization the patient has the right to be examined by a physician of his own choice and if such physician concludes from his examination that such person is not mentally ill, such person shall not be admitted

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to or detained in a hospital for mental illness. (This provision for examination by a physician of one's own choice is new).

4. Except for voluntary admissions, when a patient has been admitted to a private hospital for mental illness the new law provides that the person in charge shall immediately notify the secretary of the public Welfare Council in writing. The said secretary shall also be notified of the discharge of such patient before or at the termination of thirty days, or of the pending or the completed commitment of such patient by a Court of Probate.

5. The new law becomes effective October 1. The rulings affecting the new law will probably be forthcoming from the State Departments.

The Connecticut Commission on Alcoholism

Studies have shown that the average doctor sees and recognizes in the course of a year's practice a sizable number of chronic alcoholics. Today it is generally acknowledged that the alcoholic is a sick person involving medical, psychiatric, and social service treatment for his rehabilitation. Because he is sick, he is deserving, therefore, of all the help that can be given, for in a large percentage of instances he can be salvaged. In this issue Drs. Bacon and Miller describe the background and the functioning of the Connecticut Commission on Alcoholism. The part that the medical profession must play in this important program is obviously a major one. Nevertheless, it must be recognized that the rehabilitation of the alcoholic is a long process. The general practitioner has neither the time nor the facilities for treating most of these patients. The program set forth by the Commission therefore is welcomed as a means of dealing with this problem, in which the cooperation of the physician can be of great assistance. Haggard states the position in this way: "The practitioner without special training cannot usually be expected to treat the alcohol habit competently, nor would he, as a rule, wish to attempt this treatment. But nevertheless the part he can play toward the success or failure of eventual recovery of the alcoholic is often the crucial part. It is the attitude and the advice—but particularly the attitude—of the physician to whom the alcoholic and his family comes first that in great measure determines the course which the alcoholic will follow and also the understanding and cooperation—or lack of them— which he and his family will show."

Brain Development in Young Children: Implications for Health, Safety, and Learning

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Time for AMAP

Dear Doctor: This letter is to inform you that you have successfully completed Silas Marner HMO's recredentialing review process.

Now we have all grown up in a profession where meeting goals and standards, certification, recertification, even credentialing is a matter of course. With some reflection most of us see the appropriateness of all this. We are a profession which accepts the mandate of society to protect the public health, individually and collectively. And so there come obligations to provide mechanisms for members of our profession to furnish evidence of their individual training and expertise in their fields of practice.

The State has an obligation to the governed to protect and insure the public welfare. To that end standards have been imposed by various governmental organizations that must be met by those of us who aspire to practice within the borders of that particular governmental jurisdiction.

For those of us whose practice requires that institutional facilities be utilized, we understand the mandate imposed upon those institutions to apply due diligence and guarantee the fundamental competence of those practitioners enjoying staff privileges.

So why do I view my "dear doctor" letter from Silas Marner HMO with a sense of unease. Until recently the educators, certifiers, credentialers, and practitioners had much in common. Our individual aspirations and theirs were clear and collateral. Not that these systems and their implementation were perfect, mind you, but most of us—the vast majority of us—could agree on motivation and causation. Now the face of my unease assumes certain features. What if the mission statement of the certifying or credentialing organization was not as firmly rooted in the traditions of medical practice as previously was the case? What if economics entered the equations? Then we are confronted with the specter of economic credentialing and the enormous potential for disruption that concept brings to us.

However disquieting the incursion of economics into credentialing might be, there is no sense in disputing the apparent legal obligations imposed on managed-care organizations to provide evidence that so called providers empaneled by these organizations have been scrutinized in some fashion for, among other factors, their competence. The industry has responded by endorsing the formation of an organization called the National Committee for Quality Assurance (NCQA), which is charged with assessing the quality of managed-care plans across the nation. Standards have been set and managed-care organizations are striving to meet them, thereby affording approbation to their policies and procedures.

At best, all of us are inundated by a seemly endless, repetitious avalanche of applications and reapplications from each HMO, PPO, IPA, whatever, that demands, at very least, our precious time. One result is that physicians feeling tremendous pressure to reduce costs are facing unprecedented demands to be accountable for their quality of care.

While it has taken some time, a national physician response very well may be at hand. Proposed for your consideration is a voluntary, comprehensive accreditation program measuring and evaluating individual physicians against national standards, criteria, and peer performance in five areas: credentialing, personal quality, including ethics, medical education, peer review; self assessment, environment of care, and encompassing office site review of operations and medical record keeping, clinical performance measuring patient-care processes and comparative-performance feedback; and patient care results encompassing outcome management, patient satisfaction, and CQI (Continuous Quality Improvement) opportunities. The program is sponsored by the American Medical Association in cooperation with state, county, and national specialty societies and is called the American Medical Accreditation Program or AMAP. I am a convert to this initiative. My skepticism initially was shared by a wide range of physicians, organizations from state and county societies with existing credentialing programs, and specialty societies who feared unwarranted encroachment on certification standards.

The national organization has been working within these organizations to allay their concerns. Existing programs can be assimilated into the process. Specialty societies can be enlisted to develop standards for the collection and analysis of data to measure physician performance and outcome. The program could be a boom to young physicians entering practice and facing numerous obstacles to prove their qualifications to managed-care panels.

Think of it! A national credentialing body operated by physicians but acceptable to all interested parties, from the NCQA to the state and federal government. Indeed, an idea whose implementation is long overdue.

Stanley S. Keating, M.D.
President

M.D. Health Plan has been through many changes in the past year. The merger with Health Systems International has allowed us many new and exciting opportunities, including a Personal Medical Management System:

"the right service by the right provider at the right time."

Nothing should stand between *you* and your *patients*

*W*e know that the relationship between physician and patient is the most important. As an HMO, our responsibility is to be a resource to those relationships, working closely with our physicians to assist in the direction of patient care in the most efficient way possible while focusing on high quality. Outcome is still the best measure of our success, not the bottom dollar. Just doing the right thing will always be the most cost effective.

It's also important to know that the CSMS–IPA remains *separate* from the HMO and is owned by the Connecticut State Medical Society.

M.D. HEALTH PLAN

6 Devine Street, North Haven, CT 06473 (800)772-5869 (203)230-1000

UNIVERSITY OF MARYLAND, BALT

REFLECTIONS ON MEDICINE

After 175 Years: Still Managing the Toughest Problems

ROBERT U. MASSEY, M.D.

IN this issue of *Connecticut Medicine* we celebrate 175 years of one of Connecticut's most distinguished institutions and its first hospital. Although the matter of an asylum for the insane had been raised by the Rev. Nathaniel Dwight, both a physician and a minister, 10 years earlier at a Hartford meeting of the Connecticut State Medical Society, that effort came to nought. Not until 1820 was the proposal again made, this time by Eli Todd (1769–1833) "who stepped far in advance of his time when he urged that insanity should come under the supervision of medicine. ..." Both the Institute of Living and Yale School of Medicine trace their beginnings from the foresight of the early 19th-century members of the State Medical Society; in fact, the Society "emptied its treasury for the cause" of The Hartford Retreat.

Reading through these papers, which pretty much cover the history of American psychiatry, I wondered what ever had become of Sigmund Freud and psychoanalysis, a name and a therapy synonymous with psychiatry when I was in medical school over 50 years ago. To be sure, most of us who were headed for internal medicine or surgery guessed that what we heard in junior lectures on Freudian theory was all mostly myth-making, and even a little embarrassing; we were therefore relieved to find in our neuropsych clerkships that the faculty too had some doubts, not always plainly expressed, and spoke at times of the "commonsense psychiatry" of Adolf Meyer. Now it seems that Freud is history, perhaps best ignored, except, of course, in English departments of prestigious schools where Freudian insights comprise an unassailable ideology, especially among the postmodern lit crit crowd.

Although in the papers in this issue of *Connecticut Medicine* Freud is virtually absent, I am sure that most of us nonpsychiatrists have been so thoroughly indoctrinated that we continue to take many Freudian notions as scientifically or experientially established fact. Who doesn't recognize when our superego is hounding us, or that we are being pushed around, willy-nilly, by some little repressed monster in our id? How many of us still make Freudian slips, or easily recognize an obvious phallic symbol?

In the first paragraph of his book, *The Emergence of American Psychiatry: 1820–1940,* Gerald N. Grob captures his readers' attention with:

> In recent decades psychiatrists have come under sharp attack. They have been accused of a variety of transgressions: of rationalizing deviant behavior in medical terms ... of demanding legitimacy for a specialty that lacked a foundation in medical science; of insisting on an ability to cure and prevent mental illness that had no justification in practice; and of advancing claims for autonomy that disregard any liability for accountability. Indeed in the 1970s and 1980s psychiatry remained a marginal specialty... increasingly ignored by new medical graduates applying for residences.
>
> ... but in a larger sense many of the critics were attacking an image that bore little relation to reality.

Since the 1940s and '50s psychiatry has been a specialty in transition; the rise of cellular and molecular biology and the new sciences of neuropsychopharmacology and neurophysiology, the increasing knowledge of how nerve cells talk to each other, while far from providing an ultimate explanation for how the mind, brain, and body work in health and disease, have restored psychiatry to where it has always belonged—in the science and art of medicine. We see this in great clarity in many of the articles in this issue. This was the vision of Eli Todd when he said that the treatment of mental illness belongs to medicine; it was the message of his near-contempory in Paris, Philippe Pinel (1745–1826), physician, philosopher, erstwhile cleric, whom his students lovingly called *"ce bon Monsieur Pinel."* What we now most recall about him is that he struck the chains off the wrists and ankles of mental patients; he did much more, although that alone was worth a monument. It was Pinel's enlightenment philosophy and great humanity that was translated across the Atlantic to Eli Todd of Hartford, and which provided the ideals upon which The Hartford Retreat, later the Institute of Living, was founded.

Psychiatry remains an eclectic calling; it is neither all science nor all "moral" therapy. No doubt, the science now is real, a bioscience, empirically provable; but in concluding his paper, "Psychiatry: A Partnership for the Future," David Goldberg (*ConnMed* 1997; 61:621) reminds us that his specialty, like all of medicine, remains both art and science; we forget at our peril that: "Psychiatry is on the brink, both clinically and scientifically, of realizing its potential as a biopsychosocial discipline. It must maintain its foundation in psychotherapy if this potential is to be fulfilled."

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

This Month's Reading in Review

TIMOTHY B. NORBECK

"The legislation would put HMOs on notice that health care in New Jersey is more important than profits. We're concerned that HMOs are making economic decisions at the sacrifice of someone's well-being. The patients come first. It's a shame we have to be here today, but we have no choice when HMOs want to put themselves in the operating room yet not be accountable for their actions."

New Jersey state Representatives Reed Gusciora and Shirley Turner while introducing a bill which would allow malpractice suits against HMOs.
Asbury Park Press (23 July 1997)

"It is interesting that for-profit MCOs are apparently valued by some Wall Street analysts on the basis of their 'medical loss ratio'—the percentage of premium dollars spent on actual health care as distinguished from dollars that go to marketing, administration, and profit. The lower the percentage, the more attractive the stock. This is like valuing defense contractors more for puffing their product than for producing it."

Adam Yarmolinsky in *Health Affairs*
(July/August 1997)

Editorial Reactions to the Balanced Budget Agreement:

"If the House and President Clinton had only the courage to follow Senator Kerrey (D-Nebraska) and the Senate by supporting a gradual increase in the age of Medicare eligibility and a premium increase for better-off retirees, the reduced payments to doctors and hospitals would not have needed to be severe."

Omaha World-Herald (30 July 1997)

"There are no congressional elections this year. The economy is booming. The nation and the world are at peace, relatively. Yet, with this rare window of opportunity to tackle one of the nation's most pressing problems—the fiscal health of Medicare—Congress and the administration wimped out."

Athens Banner-Herald (31 July 1997)

The number of government regulations rose to 10,983 in 1996, up 233 from a year earlier, according to a government survey.

Wall Street Journal (10 July 1997)

Dumb and Dumber: Drug-possession defendant Christopher Johns, on trial in March in Pontiac, Michigan, said he had been searched without a warrant.... The prosecutor said the officer didn't need a warrant because a "bulge" in Christopher's jacket could have been a gun.... Nonsense, said Christopher, who happened to be wearing the same jacket that day in court.... He handed it over so the judge could see it.... The judge discovered a packet of cocaine in the pocket and laughed so hard he required a five minute recess to compose himself.

Internet (7 July 1997)

A new study that was quickly challenged by the managed-care industry suggests that health maintenance organizations for Medicare beneficiaries amount to revolving doors through which patients enter when they are in good health, but exit when they are sick.

The upshot, health researchers say, is that HMOs reap a windfall from monthly payments they receive for each Medicare member whether treatment is provided or not, and the federal Medicare program pays for patients when their costs are highest.

Medicare patients who leave "an HMO have about 50% more admissions to the hospital within the first 90 days," compared with patients who have remained in the conventional Medicare program, said Nancy A. Persily, assistant dean at George Washington University School of Public Health and Health Services in Washington, a co-author of the study.

Wall Street Journal (17 July 1997)

Only in America: In December in Louisville, Kentucky, four men robbed the National City Bank but were halted during their getaway by Danny Johnson at a store next door and thus dropped their money and fled.... Johnson, despite the temptation to skim a little off the top to take care of some of his Christmas bills, stood guard over all the stolen money until the police arrived.... National City Bank people called Johnson three days later to inform him that his loan application for $500, submitted before the bank robbery, was denied.

News of The Weird (18 July 1997)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

UNIVERSITY OF MARYLAND, BALT

From the Executive Director's Office

CALL:

SEMI-ANNUAL MEETING OF THE HOUSE OF DELEGATES

The 1997 Semi-Annual Meeting of the House of Delegates will be held at the Ramada Inn, 275 Research Parkway, Meriden. The meeting will commence at 12:30 P.M. on Wednesday, 12 November and will continue until all business has been concluded.

Stanley J. Keating, Jr., M.D., President
Howard J. Wetstone, M.D., Speaker of the House
Brian Van Linda, M.D., Secretary

11:30	Registration of Delegates Luncheon
12:30	Call to Order Business of the House

INTRODUCTION OF RESOLUTIONS

Article V, Section 12, Par. 3 of the Bylaws of the Society provides that:

Resolutions may be introduced by any Active, Life Member, Student Member or Postgraduate Physician Member of The Society, in compliance with the following provisions.

a. *All resolutions, reports and similar items of business submitted in writing and received at the office of the Executive Director not later than thirty days before the date scheduled for that meeting shall be considered as regular business of the House of Delegates.*

b. *Component county associations or the Student Member or Postgraduate Physician Member Associations whose meetings are held later than thirty-five days prior to the date of the House of Delegates shall be allowed five days after the close of such meeting in which to submit resolutions, reports and similar items of business to the Executive Director's office and still have such material considered as regular business. In no event, however, may such resolutions, etc., be considered regular business if they are received later than fifteen days prior to the date of the meeting.*

c. *Reports, recommendations, resolutions or other new business may be presented to the House of Delegates by the Council of the Society at any time and shall be considered as regular business.*

d. *Any business which does not qualify as regular business in accordance with the foregoing provisions may be accepted for consideration by a majority vote of the delegates present and shall be referred at once by the Speaker to a reference committee. When business is introduced under the provisions of this paragraph the vote shall be taken without debate, except that the introducer shall be allowed not more than two minutes to explain why it should be considered as regular business.*

The 1997 Fall CME Accreditation Conference

Jointly Sponsored by
The Connecticut State Medical Society and Danbury Hospital:

"PASSING YOUR NEXT SITE SURVEY"

WHEN?	Wednesday, October 15, 1997, 12:00 Noon to 4:30 P.M.
WHERE?	New Haven Lawn Club, 193 Whitney Avenue, New Haven, CT.
FOR WHOM?	Hospital DME's, CME Committees, and Librarians; Hospital Clinical Chairs, and CME Support Staff; CSMS Site Surveyors and CME Committee Members

PROGRAM:

	Noon		Registration and Lunch
NEW!	12:45–1:00	CSMS *Excellence in CME* Awards	Jack Fong, M.D., CSMS CME Chair
	1:00–1:15	New Policy Changes	Bob Brunell, CSMS CME Staff
	1:15–2:00	How to Pass Your Next Site Survey	Karen Hutchinson, M.D., Bridgeport
	2:00–2:30	AMA's PRA in 1997: What Do Your Doctors Need from You?	Dennis Wentz, M.D., AMA, Chicago
	2:30–3:00	Open Forum and Snack Break	
	3:00–3:30	Passing the CSMS Library Standards	Jeannine Cyr Gluck, Librarian, Manchester
	3:30-4:00	Collaborating with CPRO on Your CME Needs and QI Projects	Gary Cohen, M.D., Medical Director, CPRO
	4:00–4:30	Open Forum and Adjournment	

Danbury Hospital is accredited by the Connecticut State Medical Society to sponsor CME for physicians.
Danbury Hospital designates this CME activity for up to 3 hours in Category 1 credit towards the AMA Physician's Recognition Award.

TO REGISTER:

Please mail this form with a check for $40 per attendee payable to:
CSMS-CME, 160 Saint Ronan St., New Haven, CT 06511—*That's all!*

Please register the following for the CSMS Fall CME Conference, to be held on Wednesday, October 15, 1997, at the New Haven Lawn Club:

PRINT NAME(S): ____

____

HOSPITAL OR ORGANIZATION: ______________________________

AMOUNT ENCLOSED: $ ______________ *($40 PER PERSON)* *DATE:* ______________

UNIVERSITY OF MARYLAND, BALTIMORE

A registration statement relating to the securities of Physicians Care for Connecticut, Inc., has been filed with the Securities and Exchange Commission, but has not yet become effective. These securities may not be sold nor may offers to buy be accepted prior to the time the registration statement becomes effective. This notice shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of these securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under securities laws of such state.

PHYSICIANS CARE
FOR CONNECTICUT, INC.

Physicians Care for Connecticut, Inc. has recently filed a registration statement with the Securities and Exchange Commission relating to the proposed sale of shares of its Common Stock, representing new financing.

Physicians Care for Connecticut, Inc. was incorporated for the purpose of developing and operating a statewide IPA model HMO.

The Company's registration statement proposes the sale by the Company of:

3,000 Shares of Class A Common Stock at $4,000 per Share
and
3,000 Shares of Class B Common Stock at $4,000 per Share

(prices for Shares are subject to a prompt subscription price of $3,000 if subscription documents are received within the first 90 days of the date of the Final Prospectus relating to the offer of such securities)

It is anticipated that these Shares will be available for purchase in July, 1997, subject to the registration statement becoming effective with the Securities and Exchange Commission.

For a copy of a Preliminary or Final Prospectus, please contact the Managing Underwriter, as follows:

Newbury, Piret & Co., Inc.
One Boston Place, 26th Floor
Boston, MA 02108
(617) 367-7300
(617) 367-7301

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

OPPORTUNITIES FOR PRACTICE

FAMILY PRACTICE

Busy family practice in Stamford seeks board certified family practitioner. Full or part-time in pleasant, well staffed office. Full, on site laboratory. Good location. Serving private, medicare and HMO patients. Hours, salary negotiable. Please call or send CV to: Alan Falkoff, M.D., 838 High Ridge Rd., Stamford, CT 06905. Telephone (203) 322-7070.

INTERNAL MEDICINE

Full or part-time physician for busy Avon practice. Flexible hours. Income negotiable. Phone (860) 673-1257 or fax (860) 678-1305.

Chief Resident, Internal Medicine—Griffin Hospital, a major affiliate of Yale University School of Medicine. Excellent opportunity for academically-oriented individual, minimum requirement three years internal medicine residency, ABIM certification preferred. Title of Clinical Instructor in Medicine at Yale given. Send CV to: Dr. Vincent A. DeLuca, Jr., Chairman, Department of Medical Education & Student Affairs, The Griffin Hospital, Derby, CT 06418.

PEDIATRICIAN

Central Connecticut—Excellent opportunity for a BE/BC pediatrician to join four-person practice in a safe, family-oriented suburban location in Bristol, Connecticut. Busy, up-beat practice offers flexibility to match your lifestyle or family needs. Excellent compensation; partnership potential. Call us at (800) 892-3846, or fax us your CV at (860) 585-3525. No J-1 opportunities available.

North central Connecticut growing pediatric practice seeking full-time BC/BE pediatrician to share office/hospital responsibilities, on call 1:5. Growing community with community hospital. Nice residential area with excellent school system. Send CV to: P.O. Box 40, Somers, CT 06071 or fax (860) 875-1254 (call ahead).

PREVENTIVE MEDICINE

Preventive medicine residency manager in a Connecticut community hospital. Candidates must be BC/BE in both preventive medicine and internal medicine, currently engaged in clinical care, and must be committed to both community-based health promotion and disease prevention, and community-oriented primary care. The position requires demonstrated experience and capability in teaching biostatistics, epidemiology, and preventive medicine as well as internal medicine, and also requires a high level of expertise in computer analysis and in epidemiologic and health care research, and must possess, or be eligible for, a Connecticut medical license. Inquire: (203) 732-7325.

PRIMARY CARE

Primary care physician or orthopedist wanted for multi-disciplinary pain and rehab center in New Haven. Part-time, flexible hours, no weekends or evenings. No on call. Please call (203) 795-9745 for interview or fax CV to (203) 397-0643.

Primary care physician wanted for an urgent care center in the Hartford, Connecticut area. Practice accepts Medicare and Medicaid as well as some indigent care. Please respond to: Daniel A. Raymond, Administrator, Hampden County Medical Group, Inc., 8 Woodland Dell Rd., Wilbraham, MA 01095, telephone (413) 596-9200, fax (413) 596-4890.

PHYSICIANS WISHING TO PRACTICE IN THE STATE OF CONNECTICUT

FAMILY PRACTICE

Available immediately. Licensed in Connecticut, New Jersey, Pennsylvania and Ontario, Canada. M.D. at the University of Toronto, Canada. Internship and residency at The Toronto Hospital, University of Toronto. Passed National Boards. American Board eligible. Certified by the College of Family Physicians of Canada. Would like to join a solo, group or associates practice. Please respond to: Noemi Farkas, M.D., 300 Gorge Rd., Unit 30, Cliffside Park, NJ 07010, telephone (201) 840-9126.

GENERAL PRACTICE

Availability date flexible. Licensed in Florida, Connecticut, Oklahoma and Kentucky. M.D. at Autonomous University of Guadalajara, Mexico. Internship at Fredericton Hospital, Canada. Residency at Texas Tech. Would like to join a group, associates, institutional or industrial practice. Please respond to: Ira H. Liss, M.D., 7407 State Road 52, Hudson, FL 34667, telephone (813) 863-4753.

INTERNAL MEDICINE

Available immediately - Connecticut licensed physician with 20 years experience. Board certified in internal medicine and geriatrics. Seeking full-time internist/primary care physician position in the Greater Hartford area or surrounding areas within commute distance. Please respond to CSMS c/o IM/AD.

Available July 1998. Passed National Boards. American Board eligible in 1998. M.D. at Nishter Medical College, Pakistan. Internship at King Khalid University, Saudi Arabia. Residency at Sisters of Charity Hospital, Buffalo, New York. Would like to join a group, associates or institutional practice. Please respond to: Amjad Riaz Ul Haq, 1 Slate Creek Dr., Apt. 3, Cheektowaga, NY 14227, telephone (716) 668-8528.

MEDICAL DIRECTOR

Available October 1, 1997. Certified in family practice, and quality assurance and utilization review. American trained with good communicative skills. Family physician with practice experience plus 15 years in managed care, indemnity, HMO, PPO and POS plus credentialing. Extensive review experience that includes managed disability and some policy writing. Distinguished Fellow of the American College of Medical Quality. Active at both state and county medical society levels and specialty organizations. Recently completed Masters in Medical Management. Prefers Connecticut location, CV available. Please call (860) 636-8781 daytime, or (860) 632-5757 evenings.

PART-TIME

Available immediately. Licensed in Connecticut. Board certified in internal medicine, hematology and oncology. M.D. at the University of Vermont. Internal medicine residency at West Virginia University. Hematology/oncology fellowship at the University of Minnesota. Seeking a part-time position in a solo or group practice within commuting distance of Hartford. Please respond to: Susan F. Burroughs, M.D., 7 Butternut Lane, Simsbury, CT 06089, telephone (860) 651-3941.

PAID CLASSIFIED ADVERTISING

All PAID classified advertising orders, correspondence, and payments should be directed to: CONNECTICUT MEDICINE, Classified Department, 160 St. Ronan Street, New Haven, CT 06511, Tel. (203) 865-0587. The Classified rates are as follows: $60.00 for 25 words or less; plus $1.00 each additional word. For confidential answers, the cost is $3.00 per insertion, sent in care of CONNECTICUT MEDICINE. Ad copy must be typewritten, double spaced, with payment, and delivered no later than the first day of the month preceding the month of issue.

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The VIth International Symposium
on
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will be hosted by
The University of Connecticut Health Center
15 – 18 October 1997
at
Avon Old Farms Inn and Hotel
Avon, Connecticut
Approved for 20 hours of CME credit

For additional information please call Dr. Ann Parke,
telephone: (860) 523-7344, fax: (860) 233-2741,
e-mail: Parke@nso.uchc.edu

BRIEF SUMMARY

ZYBAN™ (bupropion hydrochloride)

Sustained-Release Tablets

The following is a brief summary only; see full prescribing information for complete product information.

CONTRAINDICATIONS: ZYBAN is contraindicated in patients with a seizure disorder.

ZYBAN is contraindicated in patients treated with WELLBUTRIN® (bupropion hydrochloride) Tablets, WELLBUTRIN SR® (bupropion hydrochloride) Sustained-Release Tablets, or any other medications that contain bupropion because the incidence of seizure is dose dependent.

ZYBAN is contraindicated in patients with a current or prior diagnosis of bulimia or anorexia nervosa because of a higher incidence of seizures noted in patients treated for bulimia with the immediate-release formulation of bupropion.

The concurrent administration of ZYBAN and a monoamine oxidase (MAO) inhibitor is contraindicated. At least 14 days should elapse between discontinuation of an MAO inhibitor and initiation of treatment with ZYBAN.

ZYBAN is contraindicated in patients who have shown an allergic response to bupropion or the other ingredients that make up ZYBAN.

WARNINGS: Patients should be made aware that ZYBAN contains the same active ingredient found in WELLBUTRIN and WELLBUTRIN SR used to treat depression, and that ZYBAN should not be used in combination with WELLBUTRIN, WELLBUTRIN SR, or any other medications that contain bupropion.

Because the use of bupropion is associated with a dose-dependent risk of seizures, *clinicians should not prescribe doses over 300 mg/day for smoking cessation.* The risk of seizures is also related to patient factors, clinical situation, and concurrent medications, which must be considered in selection of patients for therapy with ZYBAN.

- **Dose: *For smoking cessation, doses above 300 mg/day should not be used.* The seizure rate associated with doses of sustained-release bupropion up to 300 mg/day is approximately 0.1% (1/1,000). This incidence was prospectively determined during an 8-week treatment exposure in approximately 3,100 depressed patients. Data for the immediate-release formulation of bupropion revealed a seizure incidence of approximately 0.4% (4/1,000) in depressed patients treated at doses in a range of 300 to 450 mg/day. In addition, the estimated seizure incidence increases almost tenfold between 450 and 600 mg/day.**
- **Patient factors: Predisposing factors that may increase the risk of seizure with bupropion use include history of head trauma or prior seizure, central nervous system (CNS) tumor, and concomitant medications that lower seizure threshold.**
- **Clinical situations: Circumstances associated with an increased seizure risk include, among others, excessive use of alcohol; abrupt withdrawal from alcohol or other sedatives; addiction to opiates, cocaine, or stimulants; use of over-the-counter stimulants and anorectics; and diabetes treated with oral hypoglycemics or insulin.**
- **Concomitant medications: Many medications (e.g., antipsychotics, antidepressants, theophylline, systemic steroids) and treatment regimens (e.g., abrupt discontinuation of benzodiazepines) are known to lower seizure threshold.**

Recommendations for Reducing the Risk of Seizure: Retrospective analysis of clinical experience gained during the development of bupropion suggests that the risk of seizure may be minimized if

- **the total daily dose of ZYBAN does *not* exceed 300 mg (the maximum recommended dose for smoking cessation), and**
- **the recommended daily dose for most patients (300 mg/day) is administered in divided doses (150 mg twice daily).**
- **No single dose should exceed 150 mg to avoid high peak concentrations of bupropion and/or its metabolites.**
- **ZYBAN should be administered with extreme caution to patients with a history of seizure, cranial trauma, or other predisposition(s) toward seizure, or patients treated with other agents (e.g., antipsychotics, antidepressants, theophylline, systemic steroids, etc.) or treatment regimens (e.g., abrupt discontinuation of a benzodiazepine) that lower seizure threshold.**

Potential for Hepatotoxicity: In rats receiving large doses of bupropion chronically, there was an increase in incidence of hepatic hyperplastic nodules and hepatocellular hypertrophy. In dogs receiving large doses of bupropion chronically, various histologic changes were seen in the liver, and laboratory tests suggesting mild hepatocellular injury were noted.

PRECAUTIONS:

General: ***Allergic Reactions:*** Anaphylactoid reactions characterized by symptoms such as pruritus, urticaria, angioedema, and dyspnea requiring medical treatment have been reported at a rate of about 1-3 per thousand in clinical trials of ZYBAN. In addition, there have been rare spontaneous postmarketing reports of erythema multiforme, Stevens-Johnson syndrome, and anaphylactic shock associated with bupropion.

Insomnia: In the dose-response smoking cessation trial, 29% of patients treated with 150 mg/day of ZYBAN and 35% of patients treated with 300 mg/day of ZYBAN experienced insomnia, compared to 21% of placebo-treated patients. Symptoms were sufficiently severe to require discontinuation of treatment in 0.6% of patients treated with ZYBAN and none of the patients treated with placebo.

In the comparative trial, 40% of the patients treated with 300 mg/day of ZYBAN, 28% of the patients treated with 21 mg/day of HABITROL® (nicotine transdermal system) (NTS), and 45% of the patients treated with the combination of ZYBAN and NTS experienced insomnia compared to 18% of placebo-treated patients. Symptoms were sufficiently severe to require discontinuation of treatment in 0.8% of patients treated with ZYBAN and none of the patients in the other three treatment groups.

Insomnia may be minimized by avoiding bedtime doses and, if necessary, reduction in dose.

Psychosis, Confusion, and Other Neuropsychiatric Phenomena: In clinical trials with ZYBAN conducted in nondepressed smokers, the incidence of neuropsychiatric side effects was generally comparable to placebo. Depressed patients treated with bupropion in depression trials have been reported to show a variety of neuropsychiatric signs and symptoms including delusions, hallucinations, psychosis, concentration disturbance, paranoia, and confusion. In some cases, these symptoms abated upon dose reduction and/or withdrawal of treatment.

Activation of Psychosis and/or Mania: Antidepressants can precipitate manic episodes in bipolar disorder patients during the depressed phase of their illness and may activate latent psychosis in other susceptible individuals. The sustained-release formulation of bupropion is expected to pose similar risks. There were no reports of activation of psychosis or mania in clinical trials with ZYBAN™ conducted in nondepressed smokers.

Use in Patients With Systemic Illness: There is no clinical experience establishing the safety of ZYBAN in patients with a recent history of myocardial infarction or unstable heart disease. Therefore, care should be exercised if it is used in these groups. Bupropion was well tolerated in depressed patients who had previously developed orthostatic hypotension while receiving tricyclic antidepressants, and was generally well tolerated in a group of 36 depressed inpatients with stable congestive heart failure (CHF). However, bupropion was associated with a rise in supine blood pressure in the study of patients with CHF, resulting in discontinuation of treatment in two patients for exacerbation of baseline hypertension.

In the comparative trial, 6.1% of patients treated with the combination of ZYBAN and NTS had treatment-emergent hypertension compared to 2.5%, 1.6%, and 3.1% of patients treated with ZYBAN, NTS, and placebo, respectively. The majority of these patients had evidence of preexisting hypertension. Three patients (1.2%) treated with the combination of ZYBAN and NTS and one patient (0.4%) treated with NTS had study medication discontinued due to hypertension compared to none of the patients treated with ZYBAN or placebo. Monitoring for treatment-emergent hypertension is recommended in patients receiving the combination of ZYBAN and NTS.

Because bupropion hydrochloride and its metabolites are almost completely excreted through the kidney and metabolites are likely to undergo conjugation in the liver prior to urinary excretion, treatment of patients with renal or hepatic impairment should be initiated at reduced dosage as bupropion and its metabolites may accumulate in such patients to a greater extent than usual. The patient should be closely monitored for possible toxic effects of elevated blood and tissue levels of drug and metabolites.

Information for Patients: See PATIENT INFORMATION at the end of the full prescribing information for the text of the separate leaflet provided for patients. Physicians are advised to review the leaflet with their patients and to emphasize that ZYBAN contains the same active ingredient found in WELLBUTRIN and WELLBUTRIN SR used to treat depression and that ZYBAN should not be used in conjunction with WELLBUTRIN, WELLBUTRIN SR, or any other medications that contain bupropion hydrochloride.

Laboratory Tests: There are no specific laboratory tests recommended.

Drug Interactions: In vitro studies indicate that bupropion is primarily metabolized to hydroxybupropion by the CYP2B6 isoenzyme. Therefore, the potential exists for a drug interaction between ZYBAN and drugs that affect the CYP2B6 isoenzyme metabolism (e.g., orphenadrine and cyclophosphamide). The threohydrobupropion metabolite of bupropion does not appear to be produced by the cytochrome P450 isoenzymes. No systemic data have been collected on the metabolism of ZYBAN following concomitant administration with other drugs or, alternatively, the effect of concomitant administration of ZYBAN on the metabolism of other drugs.

Animal data indicated that bupropion may be an inducer of drug-metabolizing enzymes in humans. However, following chronic administration of bupropion, 100 mg t.i.d. to 8 healthy male volunteers for 14 days, there was no evidence of induction of its own metabolism. Because bupropion is extensively metabolized, the coadministration of other drugs may affect its clinical activity. In particular, certain drugs may induce the metabolism of bupropion (e.g., carbamazepine, phenobarbital, phenytoin), while other drugs may inhibit the metabolism of bupropion (e.g., cimetidine).

Studies in animals demonstrate that the acute toxicity of bupropion is enhanced by the MAO inhibitor phenelzine (see CONTRAINDICATIONS).

Limited clinical data suggest a higher incidence of adverse experiences in patients receiving concurrent administration of bupropion and levodopa. Administration of ZYBAN to patients receiving levodopa concurrently should be undertaken with caution, using small initial doses and gradual dose increases.

Concurrent administration of ZYBAN and agents (e.g., antipsychotics, antidepressants, theophylline, systemic steroids, etc.) or treatment regimens (e.g., abrupt discontinuation of benzodiazepines) that lower seizure threshold should be undertaken only with extreme caution (see WARNINGS).

Physiological changes resulting from smoking cessation itself, with or without treatment with ZYBAN, may alter the pharmacokinetics of some concomitant medications, which may require dosage adjustment.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Lifetime carcinogenicity studies were performed in rats and mice at doses up to 300 and 150 mg/kg per day, respectively. These doses are approximately ten and two times the maximum recommended human dose (MRHD), respectively, on a mg/m^2 basis. In the rat study, there was an increase in nodular proliferative lesions of the liver at doses of 100 to 300 mg/kg per day (approximately three to ten times the MRHD on a mg/m^2 basis); lower doses were not tested. The question of whether or not such lesions may be precursors of neoplasms of the liver is currently unresolved. Similar liver lesions were not seen in the mouse study, and no increase in malignant tumors of the liver and other organs was seen in either study.

Bupropion produced a positive response (two to three times control mutation rate) in two of five strains in the Ames bacterial mutagenicity test and an increase in chromosomal aberrations in one of three in vivo rat bone marrow cytogenic studies.

A fertility study in rats at doses up to 300 mg/kg revealed no evidence of impaired fertility.

Pregnancy: ***Teratogenic Effects: Pregnancy Category B:*** Teratology studies have been performed at doses up to 450 mg/kg in rats (approximately 14 times the MRHD on a mg/m^2 basis), and at doses up to 150 mg/kg in rabbits (approximately 10 times the MRHD on a mg/m^2 basis). There is no evidence of impaired fertility or harm to the fetus due to bupropion. There are no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed. Pregnant smokers should be encouraged to attempt cessation using educational and behavioral interventions before pharmacological approaches are used.

Labor and Delivery: The effect of ZYBAN™ on labor and delivery in humans is unknown.

Nursing Mothers: Bupropion and its metabolites are secreted in human milk. Because of the potential for serious adverse reactions in nursing infants from ZYBAN, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Clinical trials with ZYBAN did not include individuals under the age of 18. Therefore, the safety and efficacy in a pediatric smoking population have not been established. The immediate-release formulation of bupropion was studied in 104 pediatric patients (age range, 6 to 16) in clinical trials of the drug for other indications. Although generally well tolerated, the limited exposure is insufficient to assess the safety of bupropion in pediatric patients.

Use in the Elderly: In general, older patients are known to metabolize drugs more slowly and to be more sensitive to the side effects of drugs. A single-dose pharmacokinetic study demonstrated that the disposition of bupropion and its metabolites in elderly subjects was similar to that of younger subjects (see CLINICAL PHARMACOLOGY section of full prescribing information). Of the approximately 5,600 patients who participated in clinical trials with bupropion sustained-release tablets (depression and smoking cessation studies), 303 were 60 to 69 years old and 88 were 70 years of age or older. The experience with patients 60 years of age or older was similar to that in younger patients.

ADVERSE REACTIONS: (see also WARNINGS and PRECAUTIONS)

The information included under ADVERSE REACTIONS is based primarily on data from the dose-response trial and the comparative trial that evaluated ZYBAN for smoking cessation (see CLINICAL TRIALS section of full prescribing information). Information on additional adverse events associated with the sustained-release formulation of bupropion in depression trials, as well as the immediate-release formulation of bupropion, is included in a separate section (see Other Events Observed During the Clinical Development and Postmarketing Experience of Bupropion).

Adverse Events Associated With the Discontinuation of Treatment: Adverse events were sufficiently troublesome to cause discontinuation of treatment in 8% of the 706 patients treated with ZYBAN and 5% of the 313 patients treated with placebo. The more common events leading to discontinuation of treatment with ZYBAN included nervous system disturbances (3.4%), primarily tremors, and skin disorders (2.4%), primarily rashes.

Incidence of Commonly Observed Adverse Events: The most commonly observed adverse events consistently associated with the use of ZYBAN were dry mouth and insomnia. The most commonly observed adverse events were defined as those that consistently occurred at a rate of five percentage points greater than that for placebo across clinical studies.

Dose Dependency of Adverse Events: The incidence of dry mouth and insomnia may be related to the dose of ZYBAN. The occurrence of these adverse events may be minimized by reducing the dose of ZYBAN. In addition, insomnia may be minimized by avoiding bedtime doses.

Adverse Events Occurring at an Incidence of 1% or More Among Patients Treated With ZYBAN: Table 1 enumerates selected treatment-emergent adverse events from the dose-response trial that occurred at an incidence of 1% or more and were more common in patients treated with ZYBAN compared to those treated with placebo. Table 2 enumerates selected treatment-emergent adverse events from the comparative trial that occurred at an incidence of 1% or more and were more common in patients treated with ZYBAN, NTS, or the combination of ZYBAN and NTS compared to those treated with placebo. Reported adverse events were classified using a COSTART-based dictionary.

Table 1

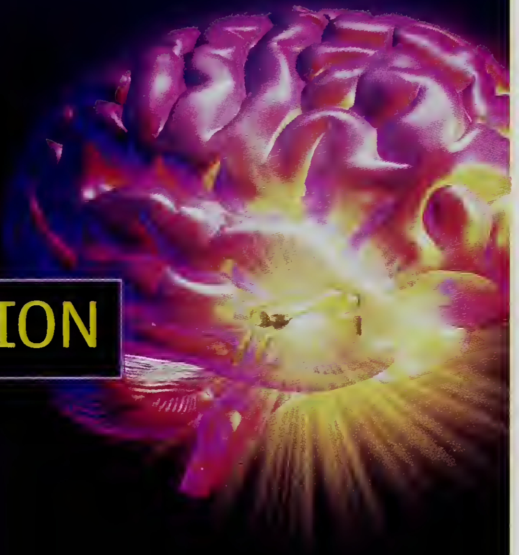
Treatment-Emergent Adverse Event Incidence in the Dose-Response Trial*

Body System/ Adverse Experience	ZYBAN™ 100 to 300 mg/day (n = 461) %	Placebo (n = 150) %
Body (General)		
Neck pain	2	<1
Allergic reaction	1	0
Cardiovascular		
Hot flashes	1	0
Hypertension	1	<1
Digestive		
Dry mouth	11	5
Increased appetite	2	<1
Anorexia	1	<1
Musculoskeletal		
Arthralgia	4	3
Myalgia	2	1
Nervous system		
Insomnia	31	21
Dizziness	8	7
Tremor	2	1
Somnolence	2	1
Thinking abnormality	1	0
Respiratory		
Bronchitis	2	0
Skin		
Pruritus	3	<1
Rash	3	<1
Dry skin	2	0
Urticaria	1	0
Special Senses		
Taste perversion	2	<1

*Selected adverse events with an incidence of at least 1% of patients treated with ZYBAN and more frequent than in the placebo group.

NEW AID TO
SMOKING
CESSATION
TREATMENT

FINALLY,
A NON-NICOTINE TABLET
THOUGHT TO WORK ON THE
BIOLOGY OF NICOTINE ADDICTION



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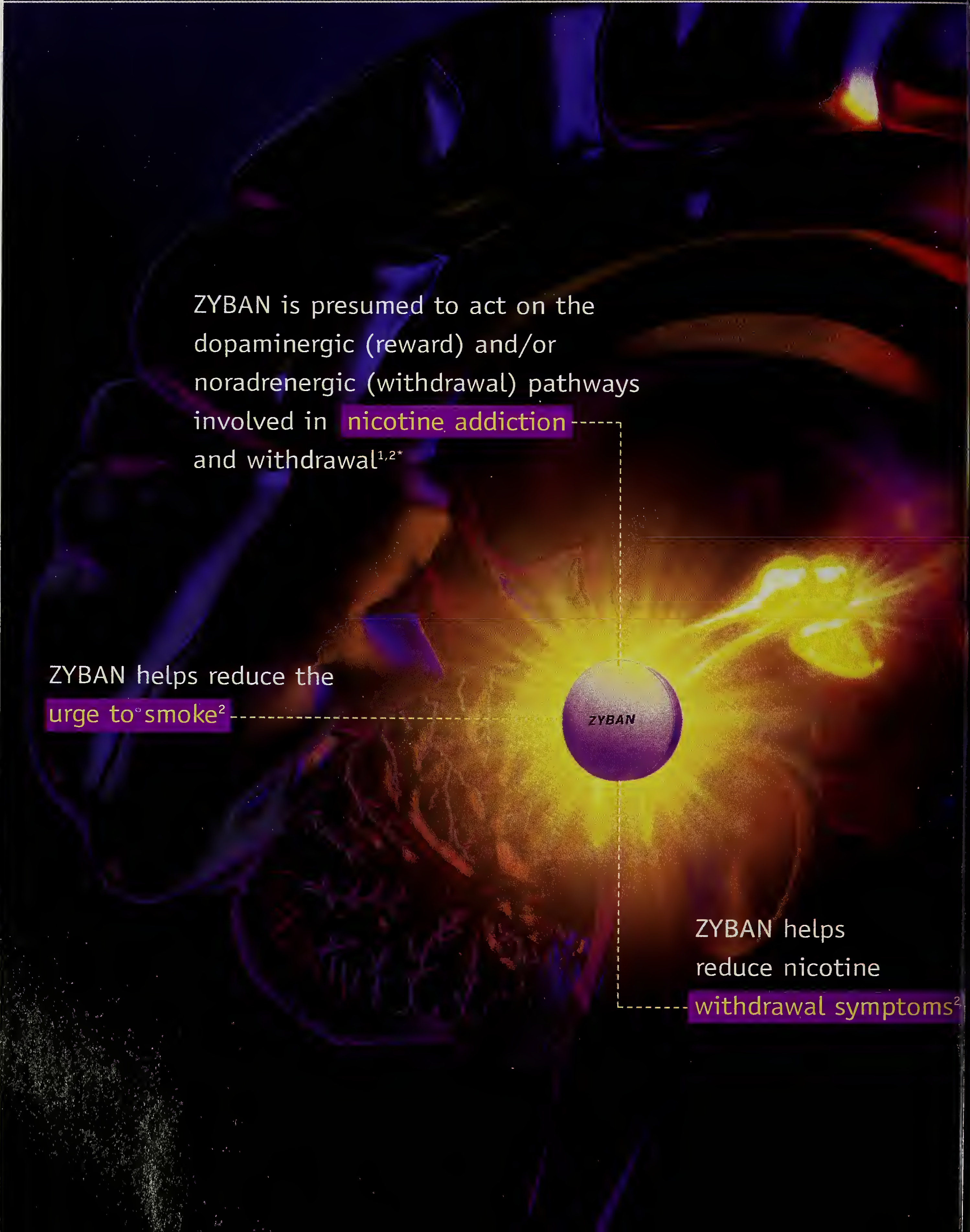
THE FIRST TABLET THAT HELPS REDUCE TH



ZYBAN is presumed to act on the dopaminergic (reward) and/or noradrenergic (withdrawal) pathways involved in **nicotine addiction** and withdrawal[1,2*]

ZYBAN helps reduce the **urge to smoke**[2]

ZYBAN helps reduce nicotine **withdrawal symptoms**[2]

RGE TO SMOKE

*Studies were conducted in animal models. The mechanism of action is unknown.

Please consult brief summary of Prescribing Information on last page.

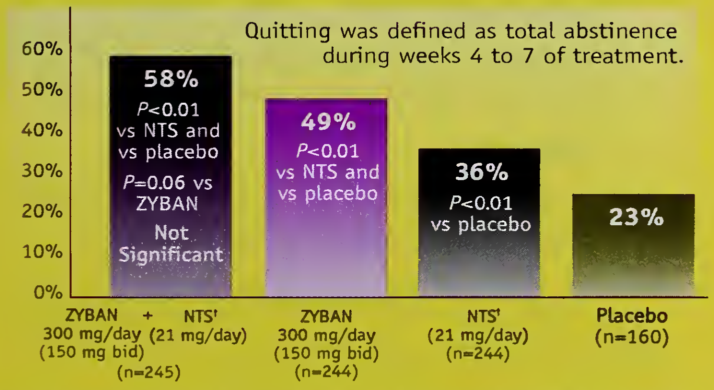
NEW

ZYBAN™

bupropion HCl sustained-release tablets 150 mg

NEUROCHEMISTRY. NOT NICOTINE.

Significantly higher 4-week quit rates than nicotine patch[†] in a 9-week[‡] comparative trial[2]



Data are from a multicenter, double-blind, placebo-controlled, parallel, randomized trial. All patients were administered either an active or a placebo tablet and wore either an active or a placebo patch. Patients received brief (5-10 minutes) individual smoking cessation and relapse prevention counseling.

[†] Habitrol® (nicotine transdermal system) (NTS) 21 mg/day. Ciba-Geigy Corp.

[‡] NTS therapy was initiated at the target quit day (days 8 to 14) and tapered at week 8 (14 mg/day) and at week 9 (7 mg/day). ZYBAN was not tapered.

Quit rates in clinical trials are influenced by the population selected. Quit rates in an unselected population may be lower than the above rates.

First-line therapy as an aid to smoking cessation treatment

- ZYBAN helps reduce nicotine withdrawal symptoms and the urge to smoke, presumably through neurochemical pathways.[2]
- Patients start ZYBAN 1 to 2 weeks before their target "quit day"... unlike nicotine replacement therapy.
- For the remainder of 7 to 12 weeks of therapy, ZYBAN provides pharmacological treatment along with individualized patient support, the ZYBAN Advantage Plan™.
- This plan should be part of a comprehensive smoking cessation treatment program to help your patients' chances of success.

Adverse event profile: Most common adverse events were dry mouth and insomnia.

NEW

ZYBAN™

bupropion HCl sustained-release tablets 150 mg

NEUROCHEMISTRY. NOT NICOTINE.

The ZYBAN Advantage Plan™

Individual counseling and support with the only non-nicotine medication for smoking cessation

- Easy enrollment by patients
- Designed to address an individual's smoking "triggers"

Encourage your patients to enroll in the ZYBAN Advantage Plan. Advise them of the importance of participating in behavioral interventions and counseling as part of their quit attempt.

Usage

- ZYBAN is indicated as an aid to smoking cessation treatment in smokers 18 years of age and older.

How to conveniently prescribe ZYBAN

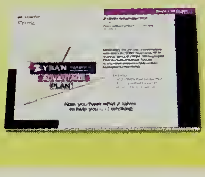
Dosing should begin at 150 mg/day for the first 3 days.

Increase dosage to the recommended and maximum 300 mg/day (150 mg bid) for most patients for 7 to 12 weeks.* Allow at least 8 hours between successive doses.

MONTH 1

RX OPTION 1

Dispense ZYBAN Sample Pack:
Contains first 3 days of therapy and the ZYBAN Advantage Plan™ (Available only from your Glaxo Wellcome representative)



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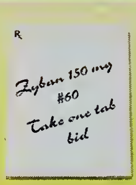
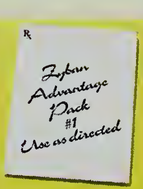


℞
Zyban 150 mg
#60
Take one tab
bid

OR

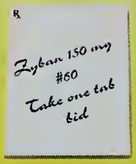
RX OPTION 2

Write Rx for ZYBAN Advantage Pack™:
Contains 1 month of therapy and the ZYBAN Advantage Plan (Available at pharmacies)



℞
Zyban
Advantage
Pack
#1
Use as directed

MONTHS 2 TO 3



℞
Zyban 150 mg
#60
Take one tab
bid

Write Rx
for ZYBAN
Tablets
150 mg bid
#60

*Clinical data are not available on the long-term use (>12 weeks) of bupropion for smoking cessation.

ZYBAN is contraindicated in patients with a seizure disorder or with a current or prior diagnosis of bulimia or anorexia nervosa. The concurrent administration of ZYBAN Tablets and an MAO inhibitor is contraindicated.

ZYBAN contains the same active ingredient found in WELLBUTRIN® and WELLBUTRIN SR® used to treat depression, and should not be used in combination with WELLBUTRIN, WELLBUTRIN SR, or any other medications that contain bupropion.

The use of bupropion is associated with a dose-dependent risk of seizures. Therefore, *clinicians should not prescribe doses over 300 mg/day for smoking cessation.* The risk of seizures is also related to patient factors, clinical situation, and concurrent medications, which must be considered in selection of patients for therapy with ZYBAN.

Please consult brief summary of Prescribing Information on next page.

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Connecticut Medicine

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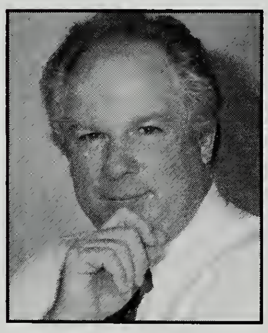

Probably not. But most do not realize that they'll still need 80% of their current income in retirement.

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Arthroscopic Ankle Fusion

ROBERT L. FISHER, M.D., WILLIAM R. RYAN, THOMAS W. DUGDALE, M.D., AND GORDON A. ZIMMERMANN, M.D.

ABSTRACT—Experience at Hartford Hospital with arthroscopic ankle fusion would indicate that the procedure is safe and effective, and offers far less patient morbidity than the traditional open procedures. Thirteen of 15 ankles operated developed successful arthrodeses. All but four patients had outpatient surgery.

Introduction

ANKLE fusion (arthrodesis) has become the accepted operative procedure for disabling arthritis of the ankle.[1,2,3] Total ankle replacement has led to disappointing results and is not recommended.[4] A number of different open surgical techniques for ankle arthrodesis have been developed.[1,5] Unfortunately, these procedures have been associated with a significant rate of complications such as infection, failure of fusion, and even amputation.[6,7,8,9]

Recently, ankle arthrodesis using arthroscopic techniques has been discussed in several reports.[10-15] This study reviews the experience at Hartford Hospital in performing ankle arthrodesis using the promising new arthroscopic methods.

Material and Methods

The medical records and radiographs of 15 consecutive patients having arthroscopic ankle arthrodesis by five surgeons from 1991 to 1995 were reviewed. These included five male and 10 female patients, ranging in age from 23 to 77 years (mean 53 years). The indications for surgery were pain and impaired ambulation not responding to conservative treatment (such as altered footwear, anti-inflammatory medications). Five patients had osteoarthritis, three rheumatoid, and seven posttraumatic degenerative arthritis of the ankle. Preoperative radiographs available in 10 patients showed joint space narrowing or asymmetry often associated with spurring (Fig.1). None of the patients had any significant deformity of the ankle. The operative technique was similar in all cases. The surgery was carried out under general anesthesia with tourniquet hemostasis and patient in a supine position. A distraction apparatus with pins through the distal tibia and calcaneus and continuous irrigation with sterile Ringer's solution facilitated intraarticular visualization. The operations were accomplished with small-stab incisions anterolaterally, anteromedially, and posterolaterally for introduction of the arthroscope and other instruments. Damaged joint surfaces were consistently observed (Fig.2). Debridement of remaining cartilage was carried out using motorized instruments with care not to alter the bony contour of the tibial and talar surfaces. Fixation of the joint was accomplished with two percutaneous cannulated screws which were passed through the distal tibia (and distal fibula in a few instances) and into the talus with the ankle joint under compression (Fig.3).

Fluoroscopic imaging assisted in assuring correct alignment of the ankle and positioning and length of the screws. Operative time averaged one hour and 42 minutes (range 65 to 135 minutes). Postoperatively, the patients' ankles were immobilized initially in a bulky dressing with posterior splint. Eleven of the 15 procedures were performed as outpatient surgery and the other four were discharged two

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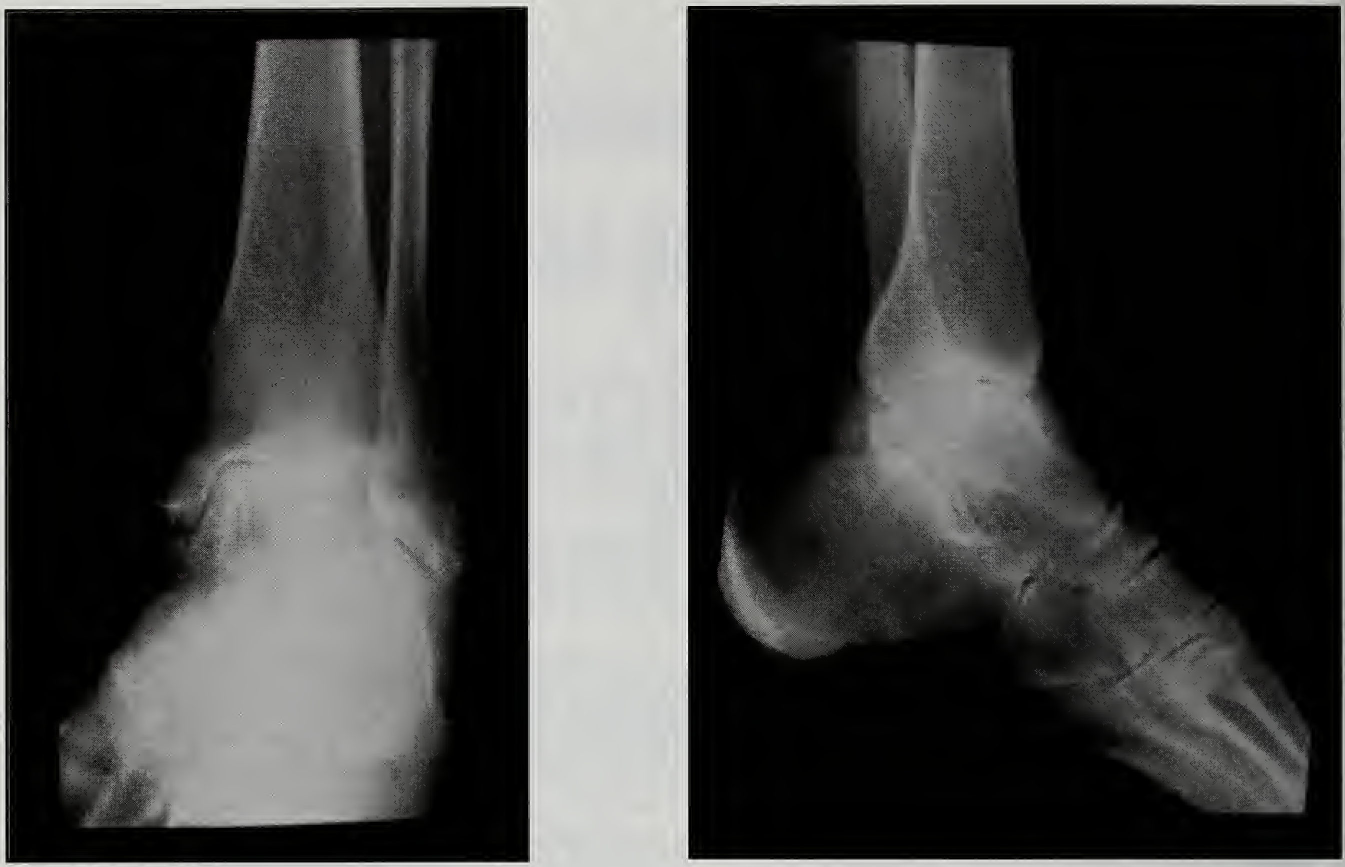

Figures 1A and B.—Preoperative anteroposterior and lateral radiographs of patient with rheumatoid arthritis. Note joint space narrowing.

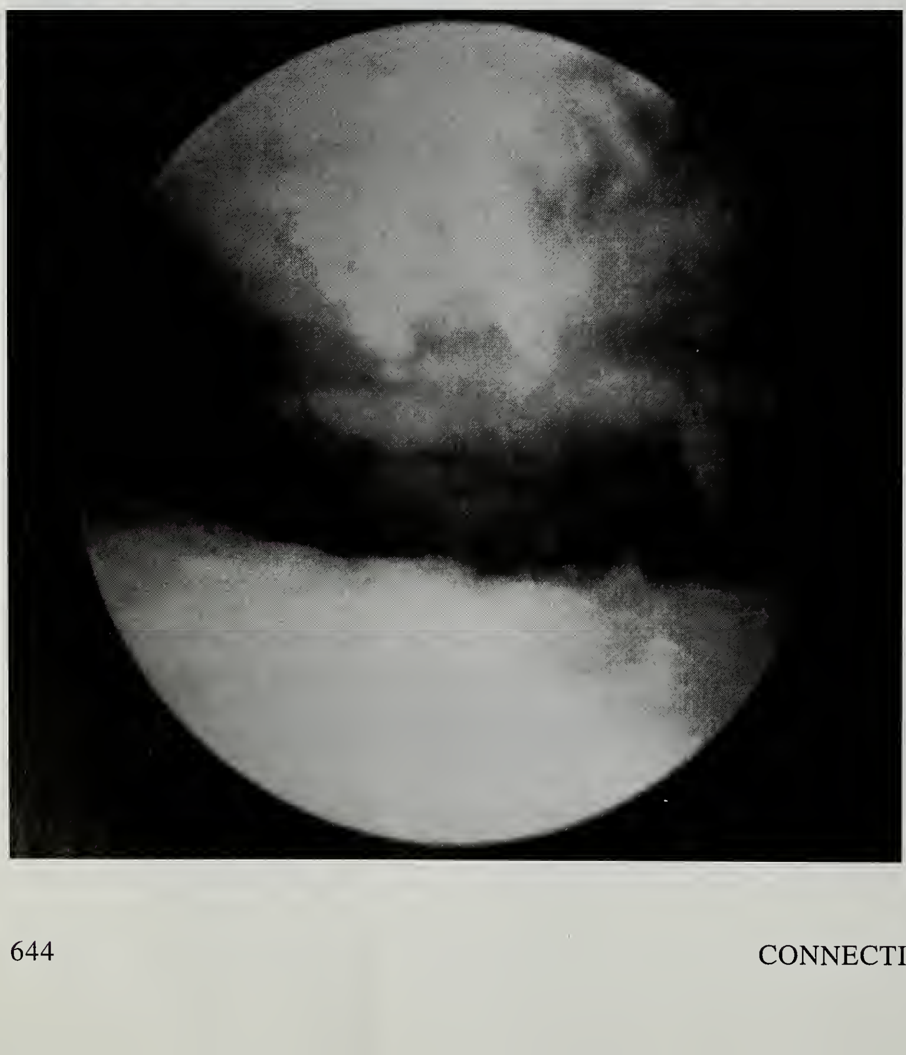

Figure 2.—Operative appearance of ankle joint showing irregular joint surfaces with loss of articular cartilage.

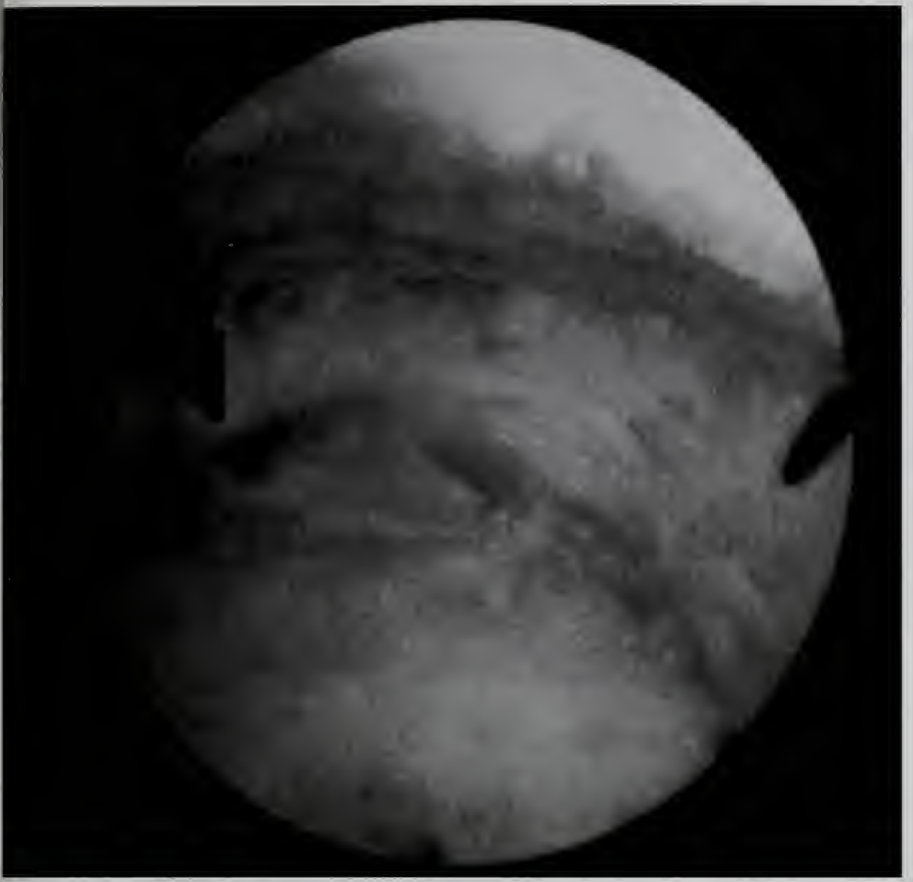

Figure 3.—Operative photo showing introduction of transfixion screws after joint surface debridement and before release of distraction apparatus.

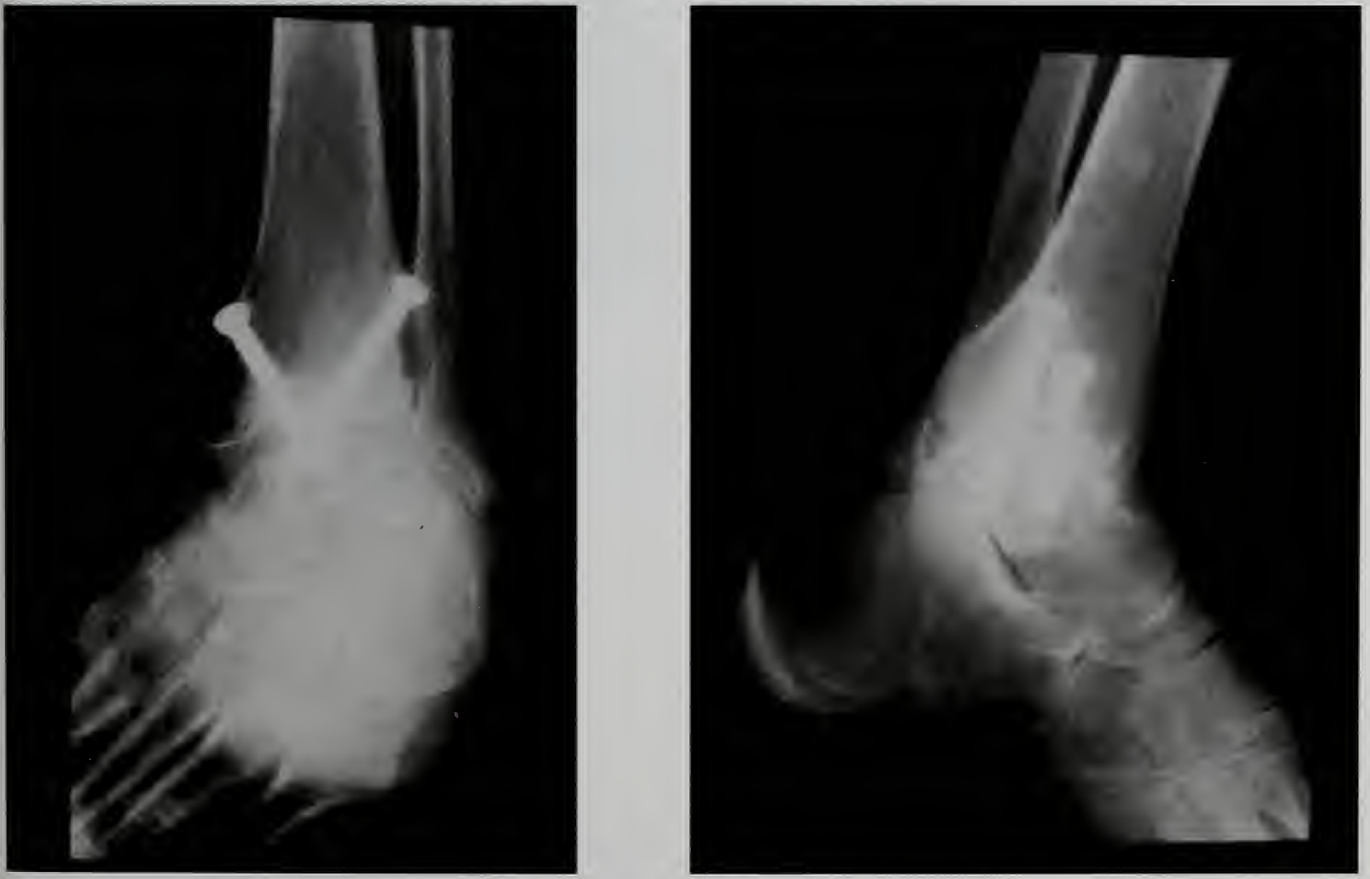

Figure 4A and B.—Post-operative radiographs of patient shown in Figure 1 Transfixion screws in place and tibiotalar union is present.

days after surgery. After wound checks in 10 to 14 days, the patients were immobilized in short-leg casts until fusion was felt to be secure (eight to 12 weeks in most instances). Weight bearing was usually commenced in four to eight weeks depending on patient comfort and the radiographic appearance.

Results

Successful arthrodesis was achieved in 13 of 15 patients (Fig. 4). The patient with successful fusion spent an average of eight weeks in a cast. The medical records would indicate that all of these patients were pain-free and satisfied with their surgery on follow-up. One patient had persistent ankle pain and nonunion requiring an open arthrodesis 15 months later. Another patient who required repositioning of the ankle and refixation two weeks after his surgery, went on to a fibrous union documented over a year postoperatively. His ankle pain was not sufficient to require reoperation.

There were no infections or neurovascular complications. Two patients had other fractures (ipsilateral metatarsal and hip) from injuries during the postoperative recovery.

Discussion

The arthroscopic method of ankle arthrodesis certainly proved to have a far lower morbidity compared to the traditional open methods in our experience. The procedure resulted in improved cosmesis, ability to use regular shoewear, relatively little loss in limb length, and few complications. The rate of successful fusion was at least comparable to that of open operation.[1,3,6,7] While the time necessary to develop fusion was difficult to assess radiologically, it was our impression that it was less than in open procedures. This would agree with Myerson who explained the difference by the minimal disturbance of the blood supply to the ankle by arthroscopic methods.[11]

We would concur that the arthroscopic approach be reserved for those patients not having any significant deformity of the ankle or avascular changes of the talus.[12,13] It would therefore be contraindicated for many cases of posttraumatic ankle arthritis with varus or valgus deformity.

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Left Ventricular Apex Visualization: The Value of Magnetic Resonance Imaging

ANTHONY E. BAUMSTARK, M.D.

ABSTRACT—Ventricular apex visualization is crucial to the evaluation of left ventricular structure and function. Not only is it necessary for accurate ejection fraction calculations; but the apex is also the segment most vulnerable to myocardial infarction, infarct expansion, aneurysm, and mural thrombi. While echocardiography is often unsuccessful, particularly in the large body habitus, nuclear magnetic resonance imaging assured apex visualization in both short and long axis planes in our series of 20 consecutive patients across a wide range of age and body habitus. Magnetic resonance imaging is an important additional tool for the accurate assessment of the left ventricle, particularly in apical disease and in patients with a large body habitus, and consequently a technically difficult echocardiogram.

Introduction

NONINVASIVE left ventricular imaging is an integral part of the diagnostic evaluation of patients with known or suspected cardiovascular disease. While magnetic resonance imaging (MRI) has proven useful in the diagnosis of thoracic aorta disease and congenital heart malformations, its acceptance in adult left ventricular (LV) imaging has been limited. This has been attributed to the availability of high quality echocardiography and the confidence shown it by those who order cardiac imaging most.[1] In spite of continuing improvements in sonographic technology, however, the basic physics of ultrasound transmission sets limitations to the scope of the examination. In a significant percentage of patients, the apical one third of the LV is incompletely visualized.[2,3] The purpose of this paper is to demonstrate the usefulness of MRI to consistently image this most important ventricular segment.

Abbreviations Used in Text

LV = left ventricular
MRI = magnetic resonance imaging
EF = ejection fraction
MI = myocardial infarction

Methods

Multiplanar breath-hold ciné MRI studies, performed on a G.E. Signa 1.5 T magnet with 5X software and routine body coil, were reviewed in 20 consecutive patients. There were seven females (mean age 63 years, range 40 to 85 years) and 13 males (mean 63 years, range 35 to 89 years). Seven patients weighed over 200 pounds (mean weight, female, 161 pounds; male,188 pounds; range 120 to 260 pounds).

Each patient's cardiac study included a basic LV examination including sagittal T1 gated locator images with respiration compensation, followed by breath-hold ciné sequences in these ventricular planes: horizontal long axis, vertical long axis, and three short axis views. The horizontal long axis view, acquired first, was used to describe an orthogonal vertical image plane, thus assuring apex visualization (Fig. 1). The vertical long axis study, in turn, allowed accurate selection of the three required short axis planes. These were obtained through the apical segment (midway between the papillary muscles and the diastolic true apex), base of the papillary muscles, and 1 cm distal to the mitral valve plane. Supplemental views were obtained as needed. All studies were completed within 45 minutes.

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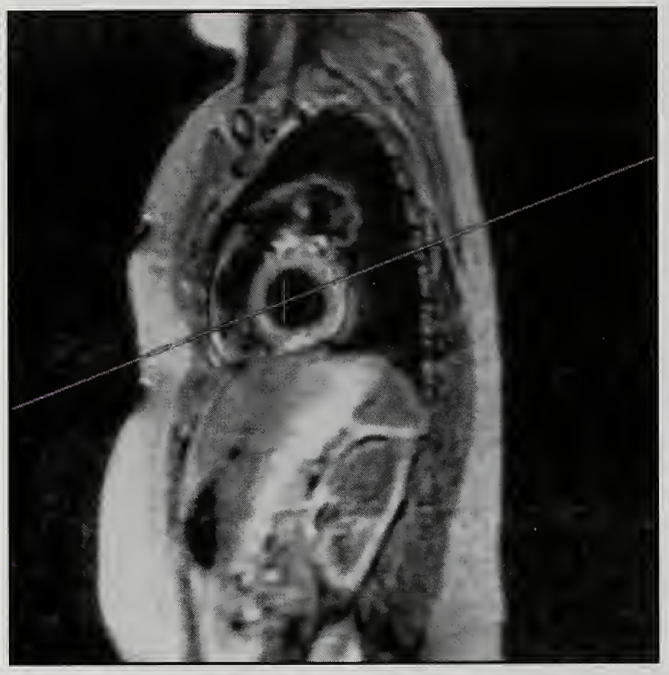
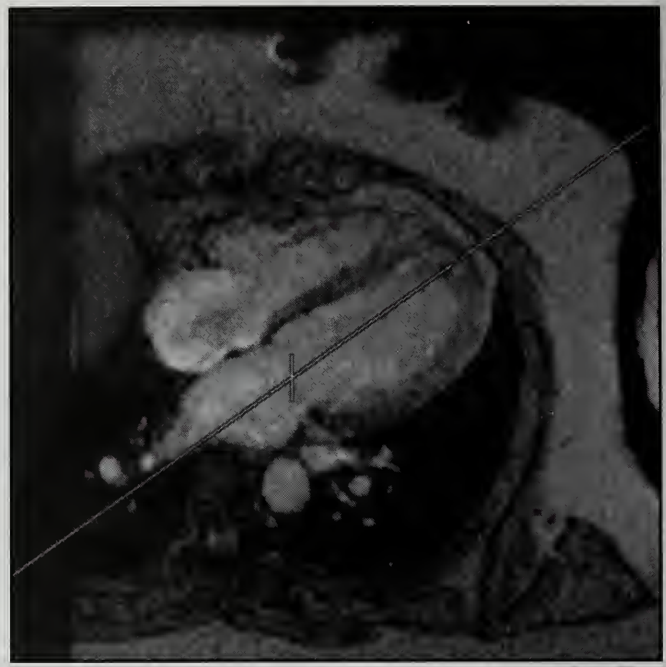


Figure 1-A



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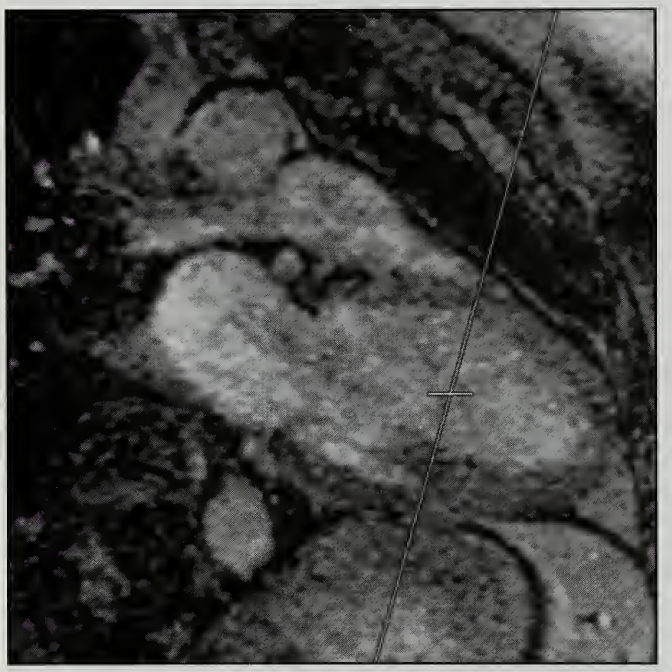

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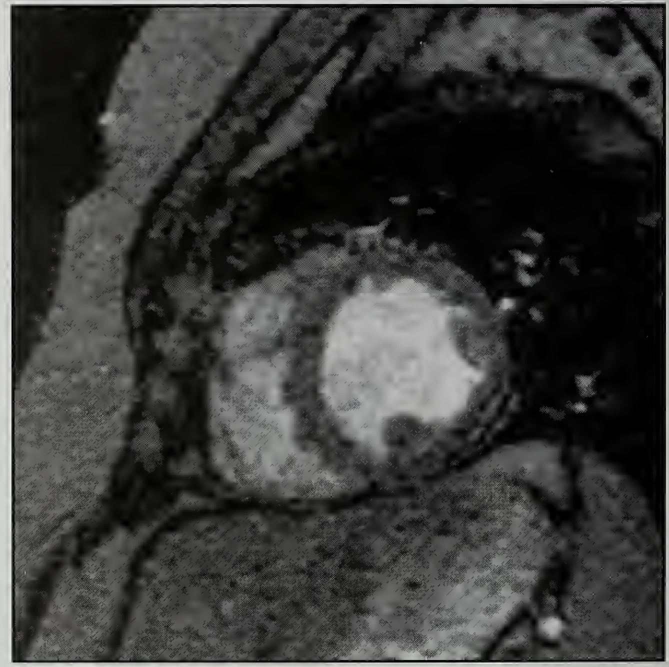
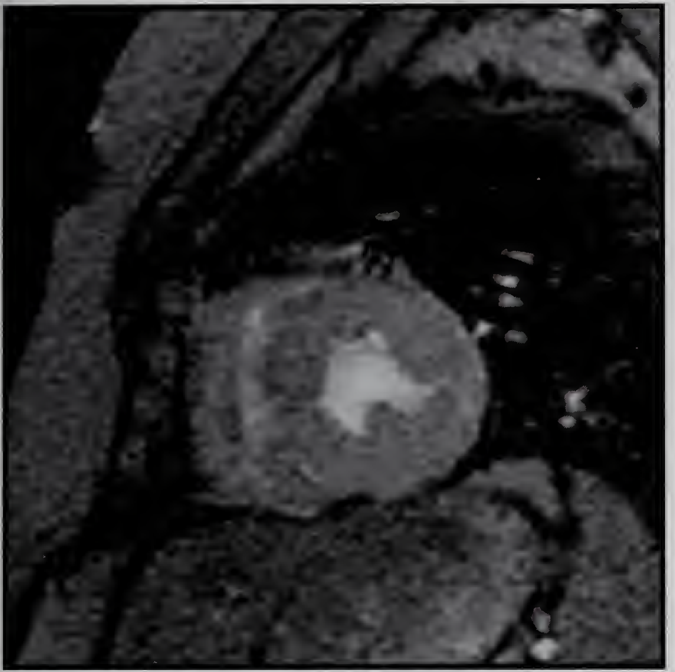


Figure 1-D

Figure 1.—Figures A through E demonstrate the process for routine image plane selection in a 260 lb., 66 inch tall white female with chest pain. A.—A sagittal locator image through the ventricles is used to select the horizontal long axis plane (white cursor line) for ciné imaging shown in B.

B.—Horizontal long axis diastolic ciné frame. The white cursor line, placed through the left ventricular mid-line, is controlled by the operator and selects the next image plane shown in C. Note the thick layer of subcutaneous adipose tissue. C.—Vertical long axis diastolic ciné frame. This orthogonal long axis plane must include the true apex. The cursor, through the papillary muscle level, selects the plane for the images in D and E. D.—Short axis diastolic ciné frame through the papillary muscles. There is sharp distinction of the ventricular wall and lumen from surrounding structures despite the large body habitus.



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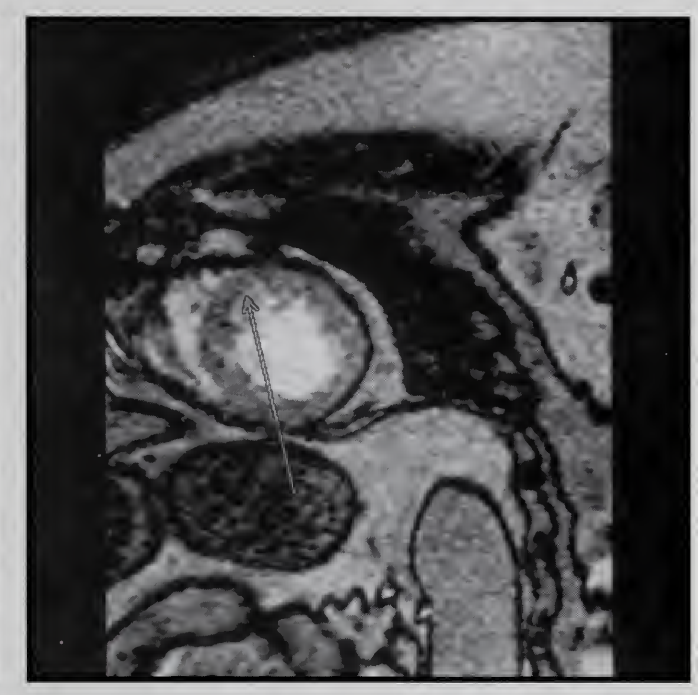

Figure 2-A

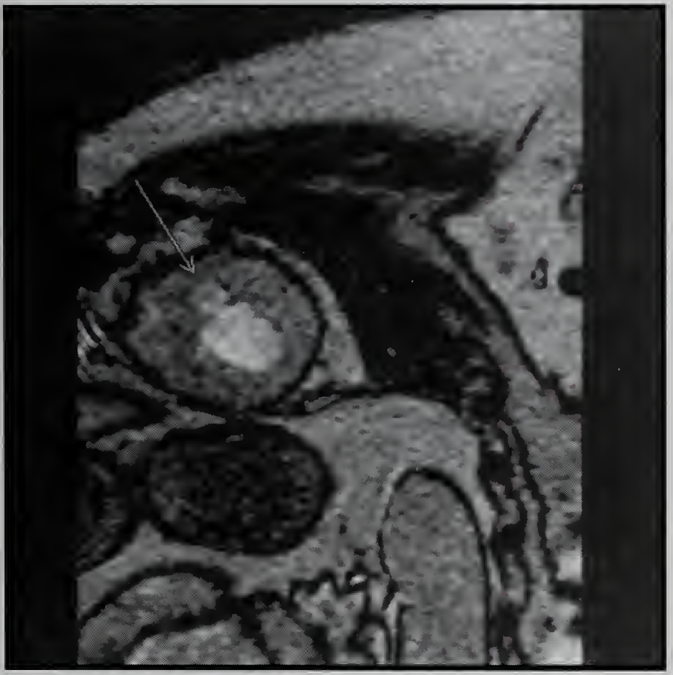

Figure 2-B

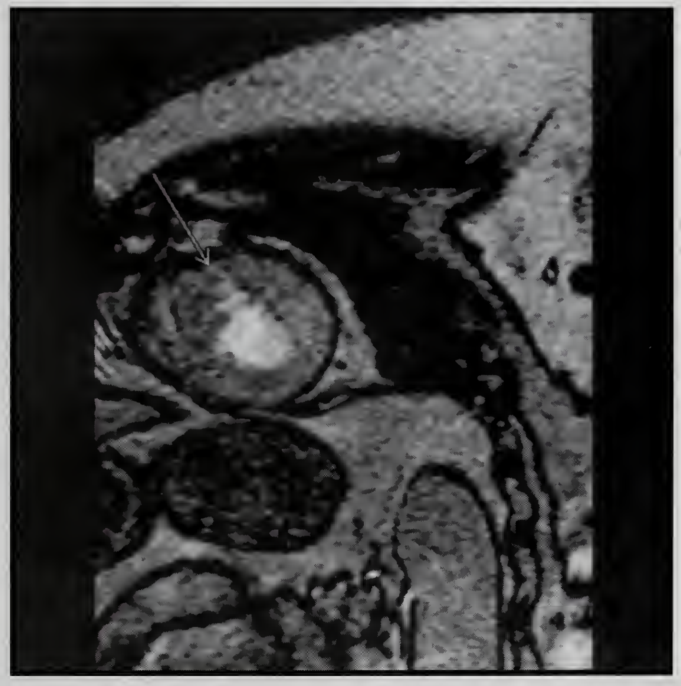

Figure 2-C

Figure 1-E.—Short axis systolic ciné frame. Circumferential systolic thickening is well defined.

Figure 2.—Short axis ciné frames through the distal apex in a 255 lb., 65 inch tall white male. A.—Diastole. An anteroseptal wall segment is abnormally thin (white arrow). B and C.—End systolic frames showing persistent thinning in the same segment indicating a small infarct. Note the abundant pericardial fat enhancing the epicardial margin of the heart.

Accepted methods of LV dimension and function measurement were reviewed and applied to MRI images.

Results

The basic LV image planes, two orthogonal long axis and three short axis views, were obtained in all patients, regardless of age and body habitus. This allowed ventricular volume and ejection fraction (EF) measurement according to the modified Simpson's rule, the geometric model of greatest practical accuracy.[4]

Views of the distal one-third of the LV, including the true apex, were obtained in all patients. This was verified by both anatomic landmarks (relative position of papillary muscles, right ventricle, and chest wall) and geometric rule inherent in the sequence of image planes (orthogonal long axis planes guarantee apex visualization).

There was no significant difference in image resolution across the wide range of age and body habitus. Image contrast was actually improved in the larger patients with increased epicardial and pericardial fat (Fig. 2). The image acquisition and quality were operator independent.

Discussion

A strong case may be made that the distal one third of the LV, the apical segment, is the most important segment to visualize in LV imaging. The most accurate geometric models used in ejection fraction calculation require the accurate measurement of the ventricular long axis, measured from base through the true apex.[4] The EF is the single most important indicator of mortality following myocardial infarction (MI),[5] and is useful in tailoring postinfarction therapy,[6,7] and important prognostically in virtually all forms of heart disease.[8]

In addition to accurate calculation of the EF, apex visualization is especially important in coronary artery disease. Pathological studies indicate that approximately half of MIs are anterior in location with most involving the apical one third.[9] Eighty percent of all ventricular aneurysms are apical,[10] and the apex is the segment most vulnerable to infarct expansion.[11] Large apical infarcts are also prone to form mural thrombi in as many as 60% of cases.[12]

While echocardiography is the current noninvasive imaging modality of choice, there are obstacles which have hampered it from the very beginning. Adjacent lung, ribs, sternum, and fat attenuate or deflect the ultrasound beam, often restricting access through the heart to narrow parasternal and apical "windows."[13] This may seriously degrade image quality, primarily in patients with a large body habitus, resulting in poor or nonvisualization of crucial ventricular wall segments.[2,3,13] In a classic study by Barrett et al, the best apical transducer position was studied by angiocardiography in a small series of patients. The transducer was found to be 33 degrees cephalad to the true apex despite repeated attempts to find a true apical window.[2] This necessarily results in foreshortening of the ventricle, compromising volume measurements and complete apical segment visualization. Short axis apical views are particularly difficult, plagued by distortion and lateral endocardial dropout because of overlying lung.[3] Echocardiography is also highly dependent on operator expertise.

Breath-hold ciné MRI offers imaging in any plane selected by the operator. When performed in a logical sequence, true long and short axis views of the LV, including the entire apical segment, are easily obtained despite the endless varieties of body habitus and cardiac orientation in the thorax (Fig. 1). This assures accurate chamber volumes, EFs, and their derivatives such as LV mass and wall stress. While echocardiographic image quality is degraded by surrounding structures, they add to the MRI study providing valuable anatomic and orientation information. In our study of 20 consecutive patients, the large body habitus, the nemesis of echocardiography, actually improved image quality due to the tissue contrast between myocardium and surrounding adipose tissue. In Fig. 2, three short axis apical views are displayed. While the echocardiogram of this patient (255 pounds, 70 inch tall white male) was "technically difficult" and failed to include the apex, a small anteroseptal infarct in the apical one third, suspected on electrocardiogram, was identified by MRI.

MRI does have its limitations. It is contraindicated in patients with internal electrodes because of possible electric current induction by the inherent electromagnetic radiation. This is not likely to change with future technological improvements. Since this is a gated examination, serious arrhythmias may degrade the image quality. A minimum 12-second breath-hold is necessary with present equipment.

Summary

While echocardiography is the current LV imaging modality of choice, the fundamental limitations of ultrasound render cardiac apex visualization problematic. With widely available MRI equipment, however, we have been able consistently to visualize the entire LV regardless of body habitus. This, in addition to its superior depiction of right heart and surrounding structures, makes MRI a valuable diagnostic tool. Technological improvements, already in the pipeline, will also reduce dependence on cardiac rhythm and breath-holding which are potential obstacles in the MRI study. We believe that MRI should be given special consideration in the evaluation of apical disease, in patients with a large body habitus, and when the echocardiogram is technically difficult.

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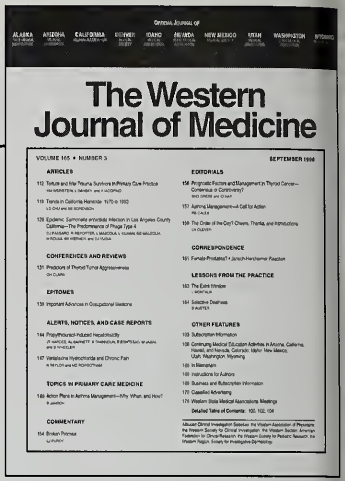

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Important Advances in Clinical Medicine

Neurosurgery

Hoi Sang U, M.D., Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in neurosurgery. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, as to both scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Neurosurgery of the California Medical Association, and the summaries were prepared under the direction of Hoi Sang U, M.D., and the panel.

Increasing the Brain's Tolerance to Ischemia in the Operating Room

THE risk of ischemic cerebral injury during neurosurgical procedures is considerable. Several therapeutic measures increase the brain's tolerance to ischemia and reduce the associated morbidity and mortality. These measures include maintaining cerebral perfusion, manipulating temperature, and administering putative neuroprotective anesthetic agents.

Cerebral Perfusion

Blood pressure management.—Hypotension is deleterious to the injured (ischemic or traumatized) brain. Maintaining an adequate mean arterial pressure and cerebral perfusion pressure is therefore critical, and can be accomplished by adjusting anesthetic depth and judiciously administering vasoactive agents such as phenylephrine and dopamine. A mean arterial pressure within 20% of the patient's baseline pressure is a reasonable target.

$PaCO_2$ management.—Some have said that manipulation of arterial carbon dioxide tension improves blood flow in the ischemic brain. Controlled studies, however, have not demonstrated a benefit of either hypo- or hypercarbia. In fact, arbitrary institution of hypocarbia has had negative outcomes in patients with head injuries. Consequently, $PaCO_2$ should be maintained in the range of 34–40 mmHg. If brain relaxation (reduction in brain bulk) is inadequate, the minimum level of hyperventilation that results in the desired level of brain relaxation is employed.

Mannitol administration. Strictly speaking, mannitol is not considered a neuroprotective agent, but it has been shown to improve blood flow in the setting of focal ischemia. It also facilitates brain relaxation, reducing the need for excessive brain retraction and hence retraction-related ischemia.

Temperature

Mild hypothermia (reduction of body temperature by three to four degrees) can dramatically reduce ischemic cerebral injury and thus is a candidate for use in the operating room. Proponents argue that hypothermia is readily achieved and it is not accompanied by significant myocardial depression, arrhythmias, or coagulation abnormalities. In addition, the patient can be readily rewarmed after the risk of ischemia has subsided. The efficacy of mild hypothermia in patients with ischemic cerebral injury has not been extensively evaluated, however. The available data are limited to patients with head injuries and those undergoing cardiopulmonary bypass. Application of mild hypothermia after head injury does reduce intracranial pressure and improve neurologic outcome without documented side effects. In patients undergoing cardiopulmonary bypass, neurological outcome was significantly better in patients whose temperature was maintained at 32°C during bypass than in those whose temperature was maintained at 37°C. Based on these data, in patients undergoing neurovascular surgery, core tem-

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perature can be reduced to about 32°C with cooling blankets, forced air cooling, and reduced ambient temperature in the operating room. Rewarming is accomplished by forced air heating. In the majority of patients, rewarming to a core temperature of about 36°C can be accomplished by the time the head dressing is applied. If not, the patient can be sedated and mechanically ventilated in a monitored setting until his or her core temperature returns to normal.

Neuroprotective Anesthetic Agents

Barbiturates.—Among anesthetic agents, barbiturates are considered to be the most efficacious in reducing focal ischemic injury. A number of laboratory investigations have shown that when administered in doses that produce burst-suppression of the electroencephalogram (EEG), barbiturates can improve outcome after stroke. In humans, thiopental loading has been demonstrated to reduce post-cardiopulmonary-bypass neurologic deficits. The administration of barbiturates in EEG burst-suppression doses is not without complications. Hypotension and cardiac depression are common. Because of their large volume of distribution and their relatively slow clearance rates, the effects of barbiturates can last for three to four days. During that time, patients require mechanical ventilation and cardiovascular support in an intensive care unit, precluding adequate neurologic examination. Further, the complications of prolonged coma, such as pneumonia and deep venous thrombosis, are dangers. Finally, the cost associated with barbiturate therapy is considerable. Consequently, the use of barbiturates for the purpose of brain protection is limited.

In patients undergoing clipping of cerebral aneurysms, a barbiturate coma is used only with clearcut evidence of cerebral ischemia during temporary vascular clipping. In this situation, the surface electrocorticogram is monitored in the region of the brain that is considered to be at risk. Upon temporary clipping, if there is evidence of ischemia, the clip is removed and barbiturates are administered. Cardiovascular support is provided by either phenylephrine or dopamine administration. Pentobarbital is administered until a burst-suppression pattern is seen on the surface electrocorticogram. The temporary clip is then reapplied. The total dose required is about 1.0–2.5 g/kg.

Barbiturate coma is induced prophylactically in patients undergoing arteriovenous malformation (AVM) resection in whom the risk of perfusion pressure breakthrough is considered to be high. These generally tend to be large or deepseated AVMs and lesions with considerable shunting. Prophylactic barbiturate coma in these patients provides excellent operating conditions (brain relaxation and presumably brain protection). In addition, barbiturate coma is also employed intraoperatively in patients who develop intracranial hemorrhage or perfusion pressure breakthrough. There are, however, no data to support the premise that the administration of barbiturates reduces the incidence of perfusion pressure breakthrough. Nonetheless, uncontrolled series have shown excellent outcomes afterAVM resections in patients who have developed intracranial hemorrhage or in whom intracranial hypertension has occurred in the postoperative period.

In general, most patients in whom barbiturate coma has been employed can be weaned off mechanical ventilation within two or three days of surgery.

Etomidate.—Theoretically, etomidate appears to be the ideal neuroprotective agent. It can reduce $CMRO_2$ by up to 50% by producing EEG burst suppression. Furthermore, unlike barbiturates, etomidate clears rapidly and does not cause myocardial depression or hypotension. Initial studies in the setting of global ischemia demonstrated that etomidate can reduce ischemic injury. The reduction in injury was relatively small, however, and was confined to single structure (the hippocampus). Subsequent studies in models of focal ischemia revealed, surprisingly, that etomidate actually increased the volume of brain infarction. This injury-enhancing effect has been attributed to its ability to reduce nitric oxide levels in ischemic brain tissue (either by inhibiting nitric oxide synthase or by directly scavenging nitric oxide). Since nitric oxide is thought to be important in maintaining blood flow during ischemia, it is conceivable that etomidate might increase the severity of ischemia. The available data therefore do not support the use of etomidate as a neuroprotective agent.

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Recent Advances in the Management of Spinal Cord Injury

SPINAL cord injury (SCI), a devastating problem that disproportionately affects young males, results in huge costs to patients and society. Though the incidence in the United States has diminished somewhat recently from 50 to 35 spinal cord injuries per million population per year, currently there are an estimated 250,000 American survivors. The resultant morbidity immediately, dramatically, and often permanently changes the survivor's lifestyle and occupation.

Complete spinal cord injury is a total and permanent loss of all neurological function below the level of injury. Incomplete injuries manifest various degrees of distal function in patterns consistent with the neuroanatomical topography of the cord. These include the Brown Sequard syndrome of cord hemisection, central cord syndrome often seen with cervical hyperextension injuries, and others. Some patients with incomplete SCI have a reasonable chance for functional recovery. Any significant neurological improvement in such patients—by even one dermatomal level—improves quality of life, particularly for injuries in the lower cervical spinal cord.

In dealing with SCI, one must always consider the dual nature of the injury. The neural elements and the musculoskeletal components (the spinal axis) are affected; assessment and management must address both. Diagnosis of the cord injury is made clinically on the physical examination of the patient, whereas its etiology, the bony or ligamentous injury, is identified radiographically.

As soon as any neurological deficit consistent with spinal cord injury is identified, the spinal axis is presumed to be unstable until proven otherwise, and full spinal precautions must be instituted to prevent further harm. The patient is immobilized in a rigid cervical collar secured to a full-length backboard with straps securing the torso and pelvis. Any patient transfers or movements must preserve this alignment by using concerted effort (four-person logrolling technique).

In 15% of cases with one spinal cord fracture, a second noncontiguous fracture exists. Screening evaluation of the entire axis from occiput to sacrum is necessary and should be done rapidly so that the backboard can be removed to prevent skin decubiti. Identified fractures require further delineation with computed tomography or magnetic resonance imaging. Once mechanical stability has been assessed, treatment of the spinal axis can be planned. Treatment decisions include restoring stability, preventing delayed deformity, immobilization versus surgery, and the timing of surgery.

There is currently no cure for the neurological deficits incurred with spinal cord injury. Medical management of the patient focuses on avoiding secondary injury and rapidly instituting methylprednisolone therapy as appropriate. Adequate resuscitation of the patient begins the process of restoring homeostasis. Hypotension and hypoxia must be avoided scrupulously and treated aggressively if they do occur. Some experimental models suggest that maintenance of cord perfusion pressure is beneficial. This is accomplished by adequate intravascular volume repletion and judicious use of pharmacological pressors. Treatment of accompanying systemic injuries should be carefully coordinated. A multidisciplinary approach facilitates injury management and transition to rehabilitation thereby attempting to minimize the emotional impact upon the patient.

Methylprednisolone in high dosage has shown sufficient sustained benefit in SCI to merit routine usage and has been the standard of care in the US since 1990. An initial bolus of 30 mg/kg over 15 minutes is followed by a 23-hour continuous infusion at 5.4 mg/kg per hour. Timing of drug administration is crucial; the bolus must be initiated within eight hours of injury. New evidence has just been published from a double-blind prospective randomized trial which studyied tirilazad, a new aminosteroid with potent antioxidant effects, versus 48-hour methylprednisolone therapy as opposed to the traditional 24-hour methylprednisolone therapy. The group treated with solumedrol for 48 hours experienced significant improvements in motor function at six weeks and six months, particularly the group who received the initial bolus within three to eight hours of injury. Those who received the initial bolus within three hours of injury showed similar recovery patterns with all three treatment regimens. Patients treated with tirilazad showed improvements intermediate to the two steroid patterns.

In the optimal management of spinal cord injury, high-dose methylprednisolone therapy is indicated. If the initial bolus is started within three hours of injury, 24-hour treatment is appropriate; if the bolus is not administered until three to eight hours, treatment should be extended for a total of 48 hours. The therapy should not be given more than eight hours after injury.

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Management of Internal Carotid Artery Occlusion

ACUTE occlusion of the internal carotid artery produces a variety of clinical syndromes, including complete absence of symptoms, fluctuating neurological deficits, or various degrees of completed stroke. In the general population, the incidence of asymptomatic internal carotid artery occlusion in people older than 60 years has been estimated to be approximately 1%. Conversely, 27% of patients with occlusion documented by angiography were found to have a history of neurological symptoms, including transient ischemic attack (TIA) and stroke. In prospective studies, the reported annual rate of ipsilateral stroke in patients with asymptomatic internal carotid artery occlusion has been estimated at 4% to 5%, two thirds occurring ipsilateral to the occluded artery.

Strokes and TIAs after internal carotid artery occlusion have been attributed to four main pathogenic mechanisms: 1) emboli into the circle of Willis from the distal end of the occlusive thrombus; 2) emboli originating from a residual internal carotid artery "stump" through the external carotid artery; 3) emboli from ipsilateral common carotid artery, external carotid artery, or aorta through collateral channels; or 4) hypoperfusion distal to the occlusion. Because of the capacity of the cerebral circulation to develop collateral flow, chronic hypoperfusion after internal carotid artery occlusion is relatively uncommon. In this condition, autoregulation is impaired and cerebral blood flow is susceptible to changes in blood pressure or cardiac output. This concept led to the widespread application of extracranial-to-intracranial bypass procedures in the 1970s. Although a randomized, prospective trial showed no benefit from this bypass for preventing stroke in patients with internal carotid artery or middle cerebral artery occlusion, there may be a subset of such patients with truly impaired cerebral autoregulation who would benefit from surgical revascularization to augment flow. To identify this subgroup, cerebral vasodilating stimuli such as CO_2 or acetazolamide can be used to dilate the vascular bed transiently and determine the adequacy of cerebral hemodynamic reserve by transcranial Doppler monitoring or single-photon emission computed tomography (SPECT) imaging.

Distinguishing between high-grade internal carotid artery stenosis and chronic occlusion is critical, since the two conditions are treated in different ways. Whereas carotid endarterectomy has been shown to reduce stroke risk significantly in patients with symptomatic and possibly asymptomatic carotid stenosis, reconstructive surgery on chronically occluded carotid arteries is generally not attempted. Even when patency can be re-established, there is a high rate of reocclusion, with catastrophic consequences. Noninvasive diagnostic modalities such as carotid artery ultrasound and magnetic resonance angiography have limitations for the diagnosis of carotid occlusion. Although advances in noninvasive imaging of the carotid artery will likely reduce or eliminate the need for conventional angiography, the clinician must be aware of the limitations of these tests before determining treatment.

In patients with acute carotid occlusion and profound neurological deficits, rapid emergent endarterectomy has been reported to yield good results occasionally. In one study, collateral flow on the preoperative angiogram was a good prognostic factor, and an associated middle cerebral artery embolus was a poor prognostic factor. Other studies showed no outcome difference between patients with restored patency of the internal carotid artery and those in whom patency was not restored. The duration of occlusion, extent of reduction of flow, degree of collateral filling, and tissue vulnerability are critical variables that contribute to the size of a focal ischemic area and its penumbra. Therefore, if surgery is to pursued, it should be done as rapidly as possible, since the duration of ischemia is one of the most critical factors influencing outcome. Many restrict emergent endarterectomy for carotid occlusion to patients with documented occlusion (eg, hospital inpatients post-angiography) who do not respond to intra-arterial thrombolysis.

Both prospective and retrospective data have highlighted the increased risk of ipsilateral stroke during carotid endarterectomy in patients with contralateral carotid occlusion. In carotid endarterectomy trials for symptomatic and asymptomatic stenosis, contralateral occlusion imposed both a higher perioperative stroke rate and a higher risk of stroke in the nonsurgical patients. In patients undergoing carotid endarterectomy contralateral to carotid occlusion, a higher percentage of intraoperative electroencephalographic and blood flow changes occurs, requiring the use of an intraluminal shunt to maintain cerebral blood flow.

In summary, the diagnosis, evaluation, and treatment of patients with carotid artery occlusion is complex and based largely on anecdotal and retrospective experience. Although dramatic recoveries have been reported after restoration of blood flow in an acutely occluded artery, reconstruction of a chronically occluded internal carotid artery is probably of little value. Occasionally, patients with internal carotid artery occlusion and hemodynamic cerebral ischemia may benefit from extracranial-to-intracranial bypass procedures.

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Traumatic Brain Injury

TRAUMATIC brain injury remains a major international public health problem responsible for hundreds of thousands of deaths annually. In addition to its mortal consequences, its morbidity affects millions of people, a minority of whom are damaged for life. In addition to the primary injury that occurs at the moment of impact, many macrostructural and neurochemical events occur from that time on. Clearly, prevention is imperative and is the best mechanism to limit injury. The success of seat belts and, more recently in the US, airbags is testimony to the cost-effectiveness of such preventive measures. Nevertheless, many still suffer major injuries that result in the initiation of secondary processes. Much of the focus in recent years has been on the consequences of hypotension and hypoxia and their prevention or early treatment.

One consequence of both the primary impact injury and the secondary insults is the development of brain swelling resulting in increased intracranial pressure (ICP). There has been considerable controversy about the mechanism by which ICP rises in the absence of an intracranial hematoma. For the last two decades, it was generally accepted that most of the increase in intracranial volume was caused by vascular engorgement (an increase in intravascular volume). New data suggest that in the majority of patients, at least during the first several hours and probably during the first several days, the major component responsible for increases in intracranial volume and pressure is cytotoxic edema.

These data were generated using a new magnetic resonance imaging technique called diffusion weighted imaging, which identifies the random translational motion of the protons of water, allowing the tracking of their location within the brain. A reduction in the apparent diffusion coefficient (ADC) indicates that water is moving into the cell, ie, cytotoxic edema.

The observations with regard to edema are in keeping with magnetic resonance imaging studies using gadolinium that have failed to demonstrate the movement of contrast into the brain during the first 72 hours after headinjury. This indicates that vasogenic edema, a mechanism previously thought to be responsible for water accumulation in the brain, plays little or no role within the first few days. While cytotoxic edema appears to be the predominant mechanism in some patients, increases in intravascular volume do occur.

As a result of these recent reports, new drug therapy can be aimed at brain edema. Moreover, the availability of imaging techniques to determine the cause of brain edema may also be important as we attempt to improve therapy. As the relationship between volume and pressure is not linear in the intracranial space, relatively small changes in volume can result in dramatic reductions in pressure. Thus, a reduction in intravascular volume of 10 cc can produce an ICP reduction of approximately 25 mmHg. This volume/pressure relationship compels us to develop new agents that can be used early to reduce cytotoxic edema and then, given the observations with regard to the leakage of gadolinium into the brain after the first 72 hours, to use agents that assist in closing the blood-brain barrier during that time.

These recent findings also suggest that the trend toward raising the cerebral perfusion pressure, calculated as the mean arterial pressure minus the ICP, may be some what hazardous. This is certainly fine if attempted after the first several days of injury when the barrier begins to leak. Future studies are necessary to determine the optimal cerebral perfusion pressure, the best mechanism to treat cytotoxic edema, and what tools can be used to reduce blood-brain barrier leakage.

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Calcium Channel Blockers in Left Ventricular Dysfunction or Congestive Heart Failure

CHARLES MICHAEL WHITE, PHARM.D.

CALCIUM channel blockers (CCBs) have historically been avoided in patients with congestive heart failure (CHF) due to deleterious effects on systolic function. However, in one trial, 36% of patients with ejection fractions less than 45% or those with signs of heart failure were receiving CCBs. A number of trials have been published recently that have delineated the potential role of these agents in CHF. This article reviews the use of calcium channel blockers in CHF or left ventricular dysfunction.

Verapamil

Because of its potent negative inotropic effects, verapamil has not been specifically evaluated in congestive heart failure; its effects therefore must be extrapolated from postmyocardial infarction (post-MI) and angina trials. Unfortunately, this means that its role in the nonischemic or dilated CHF patient cannot be determined. In the Danish Verapamil Infarct Trial (DAVIT) post-MI trial it was demonstrated that verapamil significantly increased the number of patients dying of cardiogenic shock in the acute MI period, and patients were more likely to develop heart failure during the trial than patients taking a placebo.[1] Additionally, DAVIT-II showed much better results for patients without CHF than for patients with CHF, although this trial did not show a definite harm overall in treating patients with verapamil.[2] However, a recently published trial comparing verapamil and trandolapril (an angiotensin C inhibitor) in patients with stable angina and left ventricular dysfunction (ejection fraction <40%) showed a significant increase in ejection fraction ($P<0.03$), and exercise duration ($P<0.01$) *vs* baseline. This study included only 14 patients and should be viewed as promising but preliminary. and hence, should not change standard practice.

Diltiazem

Diltiazem has only been directly evaluated in dilated cardiomyopathy in one trial.[3] Unfortunately this trial used historical controls (25 patients) and prospectively evaluated only 22 patients taking diltiazem. In the prospective trial, diltiazem 60 to 90 mg three times a day was given in addition to standard therapy (digoxin, diuretics, and vasodilators). The average survival time in the control group was 29 months, whereas the diltiazem group had no deaths after an average of 15.4 months ($P<0.001$). The average ejection fraction in the diltiazem group increased from 34% to 44% ($P<0.001$) but deteriorated in the control group.[3]

Interestingly, even though diltiazem has less vascular to cardiac specificity than nifedipine, nifedipine may be more cardiodepressant than diltiazem in heart failure patients. A crossover trial by Packer et al in 21 patients showed that the left ventricular stroke work index deteriorated with nifedipine (20 mg) but not with diltiazem (90 mg) ($P<0.05$), even though nifedipine was superior in decreasing mean arterial pressure.[4] Overall, six of 21 patients receiving nifedipine deteriorated clinically, while one patient deteriorated with diltiazem.[4]

Indirect information about the safety and efficacy of diltiazem in CHF is extrapolated from the large Multicenter Diltiazem Postinfarction Trial Research Group trial of diltiazem in the post-MI setting.[5] Overall, diltiazem had no effect on mortality and cardiac events (cardiac death or

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nonfatal reinfarction) but in patients with pulmonary congestion or a reduced ejection fraction a significantly higher incidence of cardiac death occured if they had received diltiazem. In contrast, patients without pulmonary congestion had a significantly lower incidence of cardiac death if they were given diltiazem rather than a placebo. Likewise, patients with ejection fractions less than 40% post-MI had an increased risk of cardiac death and delevopment of CHF if they received diltiazem. This trial suggests that diltiazem should not be used post-MI in patients with poor left-ventricular function or pulmonary congestion.[5]

Nifedipine

Nifedipine was extensively tested in CHF patients because of its potent afterload reducing effects. This is because the combination of hydralazine, a potent afterload reducer, and isosorbide dinitrate, a potent preload reducer, was associated with decreased mortality in patients with CHF.[6] In a long-term trial comparing nifedipine to captopril for CHF, only captopril significantly decreased New York Heart Association functional class and significantly increased exercise tolerance.[7] Another trial compared nifedipine to isosorbide dinitrate as well as to a combination of the two. In this trial, 24% of patients receiving nifedipine alone required hospitalization, 26% of patients receiving nifedipine and isosorbide dinitrate required hospitalization, while no patients receiving isosorbide dinitrate alone needed hospitalization.[8] Nifedipine has also been shown to be inferior to hydralazine and nitroprusside in improving cardiac output.[9,10] The reasons for nifedipine s detrimental effects may be stimulation of the renin-angiotensin-aldosterone system, and activation of the sympathetic nervous system, both of which have been associated with poor prognosis.[7–12]

Nicardipine/Nisolpidine

Neither nicardipine or nisolpidine has demonstrated a role in patients with CHF. Nicardipine (60-90 mg per day) was compared in double-blind fashion to placebo over four months in patients with Class III heart failure.[13] Nicardipine showed a higher incidence of clinical worsening of heart failure compared to placebo (P=0.06) even though it had no effect on plasma norepinephrine overall. Nisolpidine (10-20 mg twice a day) was given to 10 patients with congestive heart failure.[14] Treatment for two months was associated with a 70% readmission rate, daily furosemide requirements increased by over 60 mg, and nisolpidine increased renin and norepinephrine levels significantly.

Felodipine

Felodipine has been adequately evaluated in patients with congestive heart failure. An original study of 20 patients with CHF compared felodipine 5 mg twice a day (n=10) to matching placebo (n=10) over six months.[15] This study showed increases in stroke volume and cardiac output due to decreases in afterload in the felodipine group. However, mortality was 50% in the felodipine group compared to 30% in the placebo group. Changes in the relative heart volume, ankle circumference, or body weight were not different between the two groups.

The Vasodilator Heart Failure Trial-III (VHeFT-III) compared felodipine (5 mg twice a day) to placebo in 451 patients.[16] Follow-up for the trial was approximately 1:5 years. There was no difference in mortality between the two groups overall, or when they were subgrouped into patients with and without coronary artery disease. Neurohormonally, felodipine therapy was not baneficial. Felodipine increased plasma norepinephrine levels, which has been correlated with increased mortality in the long-term. The third trial compared felodipine (2.5–10 mg twice a day), to placebo in patients with Class II or III heart failure.[17] This 12-week, double-blind, parallel-group study showed no difference in exercise tolerance, ejection fraction, New York Heart Association classification, or orthopnea between the two groups.

Amlodipine

Amlodipine seems to be the most promising calcium channel blocker for the treatment of CHF. In a trial of patients on angiotensin coverting enzyme inhibitors and diuretics randomized to receive amlodipine or placebo, the amlodipine group showed significant improvement in exercise time and in symptomatology.[18] Furthermore, amlodipine reduced plasma norepinephrine, whereas the placebo group had increased plasma norepinephrine.[18] In a recent trial, amlodipine was found to have differing effects on morbidity and mortality depending on the etiology of CHF (ischemic or nonischemic).[19] Patients with CHF from ischemic causes derived no reduction in the risk of mortality, morbidity, or mortality and morbidity combined although it decreased the incidence of uncontrolled hypertension and showed a trend towards decreasing angina. However, in patients with dilated, nonischemic cardiomyopathy as a cause for CHF, amlodipine reduced overall mortality significantly and reduced the combined endpoint of all-cause mortality and cardiovascular morbidity. These trials demonstrate both the safety and efficacy of amlodipine in the treatment of hypertension and angina in patients with CHF and a further role in reducing morbidity and mortality in nonischemic CHF patients.[19]

Conclusions

The use of calcium channel blockers in CHF or left ventricular dysfunction is controversial. However, several calcium channel blockers have been evaluated and some trends may be noted. The use of verapamil and diltiazem cannot be advised in CHF or in left ventricular dysfunction following a myocardial infarction. However, further studies should be completed to evaluate the safety and efficacy of diltiazem in the nonischemic CHF population based on the promising results of the uncontrolled trial reported above. The use of nifedipine, nicarpidine, and nisolpidine also cannot be recommended as they appear to cause decompensation rather than producing clinical benefit. Felodipine is not efficacious in the CHF patient but may be used in the patient with angina and CHF or hypertension and CHF as it is relatively safe for this indication. practitioner, however, must be aware of the potentially detrimental neurohormonal activation associated with felodipine. Finally, amlodipine seems to be the safest calcium channel blocker in CHF patients with ischemia, and may reduce mortality in patients with nonischemic CHF, although this needs to be confirmed by further clinical trial.

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MORBIDITY AND MORTALITY WEEKLY REPORT

Lactic Acidosis Traced to Thiamine Deficiency Related to Nationwide Shortage of Multivitamins for Total Parenteral Nutrition—United States, 1997

SINCE November 1996, there has been a nationwide shortage of intravenous (IV) multivitamins (MVIs) used in U.S. hospitals and home-health-care agencies for total parenteral nutrition (TPN). Patients receiving TPN without MVI supplementation are at risk for thiamine deficiency and life-threatening complications associated with severe deficiency of thiamine, a coenzyme necessary for oxidation of keto acids (Fig. 1). This report describes three patients receiving TPN who had thiamine deficiency-related lactic acidosis in 1997 and presents recommendations for alternatives to parenteral MVI during the shortage.

Case 1.—On February 3, a 32-year-old man underwent a total coloproctectomy with ileostomy as treatment for fulminant ulcerative colitis. TPN was initiated immediately postoperatively and included 2,087 mL per day of amino acids (92 g) and dextrose (382.5 g) with 21 g fat emulsion, electrolytes, and minerals per day; however, no MVIs were added to the solution because the hospital's supply was exhausted.

Attempts to introduce clear liquids orally on February 7 and 8 were unsuccessful because of persistent severe anorexia, nausea, and vomiting. On February 10, an upper gastrointestinal barium imaging study revealed delayed transit time, but no mechanical obstruction. During February 10–22, TPN was continued without MVIs. On February 22, the patient was lethargic and weak, and abnormal laboratory findings included severe acidosis (pH 6.87 [normal: 7.35–7.45]; HCO_3, 5 mEq/L [normal: 24–28 mEq/L]; pCO_2, 28 mm Hg [normal: 35–-45 mm Hg]; pO_2, 131 mm Hg [normal: 80–100 mm Hg]; and base excess, –13 mEq/L), glucose level of 570 mg/dL (normal: 65–110 mg/dL), and serum lactic acid of 16 mmol/L (normal: 0.8–2.5 mmol/L); serum ketones were negative. Lactic acidosis of unknown etiology was diagnosed, and broad-spectrum antimicrobials were initiated after appropriate cultures were obtained. During the next eight hours, 600 mEq/L of bicarbonate was administered with only modest elevation of pH (to 7.20) and no change in base excess (–16.2 mEq/L). Because the patient's clinical condition continued to deteriorate, an exploratory laparotomy was performed; however, no focus of infection or bowel necrosis was found. An analysis for serum thiamine measured the lowest detectable level of 0.2 mg/dL (normal: 1.1–1.6 mg/dL), and 400 mg of thiamine was administered intravenously. Two hours later, a blood gas specimen contained a serum pH of 7.50 and an HCO_3 of 11.3 mEq/L. Acid/base and clinical status improved; a second dose of 400 mg thiamine was administered intravenously, and pH, pCO_2, and HCO_3 levels returned to normal.

Case 2.—On March 10, an 11-year-old girl with chronic idiopathic intestinal pseudo-obstruction syndrome, maintained on home TPN, sought care following a 3–4 day history of abdominal pain, vomiting, and decreased ostomy output. Outpatient treatment with trimethoprim/sulfamethoxazole was initiated for suspected intestinal bacteria overgrowth. Because she did not improve, she was hospitalized on March 14.

A history obtained on admission revealed that she had been started on oral MVIs on January 16 because TPN supplemented with MVI was not available. However, on February 27, she had discontinued her oral MVI supplementation without notifying her physician or home-care provider. Physical examination revealed lethargy, pallor, 10% dehydration, orthostatic hypotension, tachycardia, hyperemic gingival mucosa, alterations in papillae on her tongue, and buccal mucosa ulcerations. Laboratory findings included a sodium level of 134 mmol/L (normal: 136–146 mmol/L); potassium, 2.7 mmol/L (normal: 3.5–5.3 mmol/L); blood urea nitrogen, 44 mg/dL (normal: 722 mg/dL); glucose, 154 mg/dL (normal: 70–100 mg/dL); and hemoglobin, 12.6 mg/dL (normal: 11.0–14.5 mg/dL). Rehydration therapy was continued with the home TPN formulation; however, she developed encephalopathy, generalized tremors, aphonia (hoarseness), progressive hyperglycemia, and acidosis with an increased anion gap.

Reprinted from the *Morbidity and Mortality Weekly Report,* 13 June 1997; vol. 46, no. 23, Centers for Disease Control (CDC), National Insitute for Health (NIH).

Vitamin deficiencies were confirmed with low red blood cell (RBC) transketolase activity of 0.17 IU/gm Hb (normal: 0.75–1.3 IU/gm Hb) and decreased levels of vitamin B_{12} (<100 pg/mL; normal: 200–1140 pg/mL) and 25–OH cholecalciferol (12.5 ng/mL; normal: 16–74 ng/mL) levels. Her RBC folate level was within normal limits, and lactate levels were not measured. Treatment with parenteral thiamine and other vitamin B supplementation improved her encephalopathy and tremors.

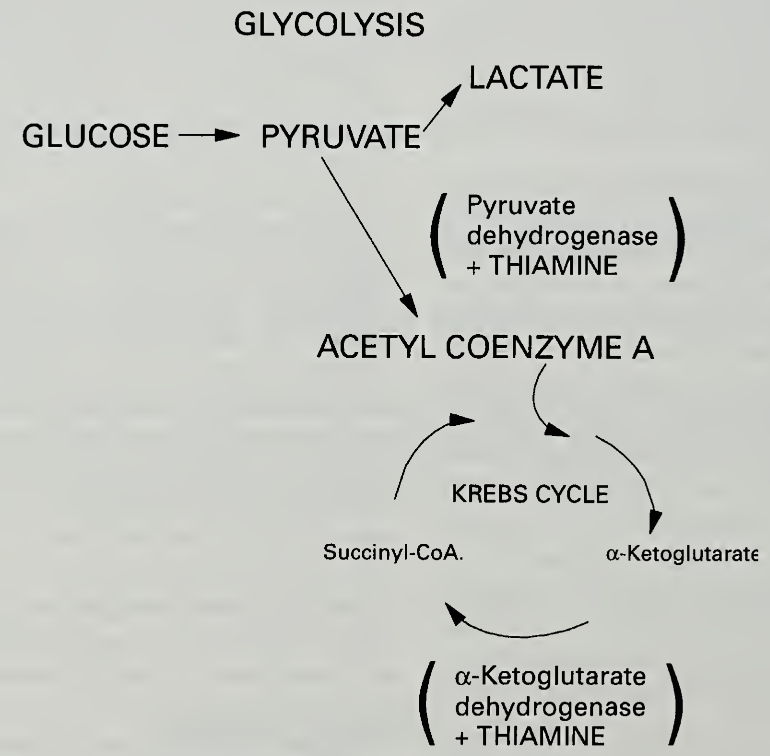
Case 3.—On January 21, a 19-year-old man began to receive home TPN for treatment of gastrointestinal dysmotility associated with antecedent chronic cholecystitis and complications of abdominal surgeries. The initial TPN formula consisted of 2,750 mL per day of amino acids (120 g) and dextrose (600 g) with 250 mL per day of 20% fat emulsion, electrolytes, minerals, vitamins, and trace elements.

On March 5, he was admitted to the hospital because of nonbloody diarrhea and fever. Findings on examination included an oral temperature of 102 F (39 C); pulse, 150 beats per minute; systolic blood pressure, 150 mm Hg; respiration rate, 20 per minute; oral thrush; an abnormally smooth tongue with decreased papillae; dry mucous membranes; diminished bowel sounds; left abdominal tenderness and rebound; rectal tenderness (without blood or abnormal mass); and a grade 2/6 systolic ejection murmur. His serum lactate level on admission was 16 mmol/L (normal: 0.93–1.65 mmol/L). The central IV catheter was removed and cultured, and TPN was temporarily discontinued. During the subsequent five days, the patient's neurologic status deteriorated markedly, and he became confused and complained of blurred vision, diplopia, and dyspnea. New findings included slurred speech, diminished deep tendon reflexes, ophthalmoplegia, and evidence of cortical blindness despite a normal fundoscopic examination. Magnetic resonance imaging (MRI) scan of the brain was consistent with Wernicke's encephalopathy.

As a result of the MRI findings, treatment was initiated with 100 mg per day of thiamine parenterally. The home TPN provider was contacted and reported that the patient did not receive IV MVIs during February 5–March 3 because of a national shortage. Within 24 hours after thiamine supplementation, the ophthalmoplegia and cortical blindness improved substantially. During the next four to five days, his mental status improved and his serum lactate level became normal.

Reported by: B. Silverman, M.D., G.M. Franklin, M.D., R. Bolin, M.D., Memorial Clinic, Olympia, Washington. D.D. Hensrud, M.D., Mayo Clinic, Rochester, Minnesota. W.P. Zeller, M.D., Loyoh Medical Center, Maywood, Illinois. American

Figure 1.—Thiamine requirements in the metabolic pathways of glucose*



***Source: Reference 1.**

Reprinted with permission from the American Society for Parenteral and Enteral Nutrition.

Recommendations to Health-Care Providers to Reduce the Risk for Vitamin Deficiency in Adult and Pediatric Patients Receiving Total Parenteral Nutrition During Intravenous Multivitamin Shortages[*]

Recommendations for Adult Patients

1. **DO NOT** use pediatric parenteral multivitamins (MVIs) for adults.
2. Use oral vitamin preparations whenever possible.
3. Reserve use of MVI-12 Injection (Astra USA, Westborough, Massachusetts)[†] for patients receiving total parenteral nutrition (TPN) or those with a medical need for intravenous MVIs.
4. Ration MVI-12 (eg, reduce the daily dose or give vitamins three times a week).
5. Use 5 mL of Multi Vitamin Concentrate (MVC) (Fujisawa, Deerfield, Illinois) three times a week along with intravenous supplementation of folic acid and monthly intramuscular or subcutaneous administration of cyanocobalamin (no parenteral biotin product is commercially available to use for supplementation). Because of the differences in the vitamin profiles of MVC and MVI-12, this provides an approximation of equivalency to MVI-12; health-care providers should remain vigilant for clinical signs of deficiency.
6. If an MVI preparation is needed and not available, then use individual vitamin preparations (oral or injectable). Optimally, patients should receive daily intravenous doses (unless otherwise clinically indicated) of 3–5 mg thiamine, 0.4–1.0 mg folate, 100 mg ascorbic acid, 5–10 mg pyridoxine, and 40-50 mg niacin. In the home setting, such patients should receive at a minimum 50 mg thiamine intravenously three times a week and folate three times a week. All patients should receive monthly doses of 100 mcg cyanocobalamin intramuscularly or subcutaneously.

Recommendations for Pediatric Patients[§]

1. Reserve use of MVI-Pediatric (Astra USA) for neonates.
2. MVI-Pediatric may deliver insufficient quantities of vitamin A in very low birthweight infants. Vitamin A supplementation in addition to MVI-Pediatric should be decided for each patient individually.
3. MVI-12 contains propylene glycol and similarquantities of polysorbate, which can cause adverse consequences:
    a. Polysorbate has been associated with hepatotoxicity resulting from use of intravenous vitamin E.
    b. Propylene glycol has been associated with hyperosmolality and seizures.
    c. Concomitant administration of drugs using propylene glycol as an excipient could increase the risk for toxicity.

    Therefore, to avoid propylene glycol toxicity, reserve MVI-Pediatric for use in low-birthweight infants (<3 lb 4 oz [<1500 g]) for which >2 weeks of TPN is anticipated.
4. Use adult MVIs for infants weighing 23 lb 4 oz (≥1500 g) and children. Supplementation with additional vitamins is necessary.

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[*] Based on recommendations from the American Society for Parenteral and Enteral Nutrition (ASPEN).

[†] Use of trade names and commercial sources is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

[§] Because of the complex nature of the recommendations for pediatric patients receiving TPN, these recommendations are only a summary. Complete detailed recommendations are available from ASPEN, telephone (301) 587-6316 or e-mail aspen@access.digex.net.

Society for Parenteral and Enteral Nutrition, Silver Spring, Maryland. Hospital Infections Program, National Center for Infectious Diseases, CDC.

Editorial Note: TPN may be used for short periods to treat severely ill patients and for prolonged periods for patients with chronic or permanent gastrointestinal failure. However, the decision to initiate TPN must be balanced against the potential risks for serious sequelae, including life-threatening lactic acidosis resulting from metabolic causes other than alcoholism (type B lactic acidosis). In 1989, three adults developed fatal severe lactic acidosis associated with acute thiamine deficiency while receiving TPN during a nationwide shortage of IV MVI preparations.[2] The three cases in 1997 described in this report also were associated with a nationwide shortage of IV MVIs that began in November 1996. These cases were characterized by low thiamine levels and rapid reversal after a single dose of IV thiamine, as well as by initially refractory lactic acidosis, hyperglycemia, and absence of sepsis. The time for development of severe lactic acidosis in these and other reported episodes (range: seven to 34 days) is consistent with the time required to deplete body stores of thiamine in healthy adults deprived of this vitamin. The large glucose load found in most TPN preparations results in additional metabolic needs for thiamine. To reduce the risk for complications related to thiamine deficiency, health-care providers should consider administration of thiamine if multivitamins are unavailable.

The current shortage of MVI supplement for TPN solution for adults first occurred in November 1996 after one of the U.S. distributors (Schein Industries, Florham Park, New Jersey*) of this product discontinued production of the supplement. Of the two remaining distributors, Astra USA (Westborough, Massachusetts) markets a supplement (MVI-12 Injection) that is identical to the product that was produced by Schein, and Fujisawa (Deerfield, Illinois) manufactures a preparation (Multi Vitamin Concentrate) that lacks three of the vitamins (folic acid, cyanocobalamin, and biotin) present in Schein or Astra's MVIs. Because Astra's supplier of the product (a contract manufacturer) has had and continues to have production difficulties, Astra has limited supplies of the product, which it is conserving for urgenVemergent situations. Fujisawa reports an increasing demand for their product.

The American Society for Parenteral and Enteral Nutrition (ASPEN) has recommended alternative options for parenteral MVI use in adults (see box). Because of reports of limited availability of IV MVIs for pediatric patients, ASPEN has recommended that supplements intended for neonates be reserved for use in this group (see box). Since the shortage began, the Food and Drug Administration has been working with Astra USA and ASPEN to identify alternative therapies and to identify alternate suppliers of acceptable product.

Physicians who prescribe TPN should recognize the potential risks for acute thiamine deficiency and lactic acidosis in patients who are not receiving adequate supplements. Until the manufacture of MVIs for TPN for adults increases, shortages of these products may continue. Patients who are receiving TPN for prolonged periods (>7 days) are at increased risk for lactic acidosis. Complications associated with inadequate MVIs for TPN should be reported to CDC's Hospital Infections Program, National Center for Infectious Diseases, telephone (404) 639-6413.

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2. CDC: Deaths associated with thiamine-deficienttotal parenteral nutrition. *MMWR* 1989; 38:43–6.

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*Use of trade names and commercial sources is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

THE MEDICAL LETTER

Topical Penciclovir for Herpes Labialis

PENCICLOVIR 1% cream *(Denavir*-SmithKline Beecham) has been approved by the US Food and Drug Administration (FDA) for treatment of recurrent orolabial herpes simplex virus (HSV) infections in adults. Acyclovir *(Zovirax) is* also available in a topical formulation for treatment of herpes simplex infections, but is approved by the FDA only for use in immunocompromised patients. Oral drugs approved for treatment of some herpes simplex infections, but not recurrent orolabial infections, include acyclovir, valcyclovir *(Valtrex)* and famciclovir *(Famvir),* which is rapidly hydrolyzed to penciclovir *in vivo* (*Medical Letter* 1994; 36:97).

MECHANISM OF ACTION—Penciclovir is an acyclic nucleoside derivative active *in vitro* against HSV types 1 and 2 and varicella-zoster virus (VZV). HSV type 1 is the usual cause of orolabial herpes; HSV type 2 is the usual cause of genital herpes. Penciclovir, like acyclovir, inhibits viral DNA synthesis. Both are guanosine analogs that become active only after intracellular metabolism to a triphosphate, which competitively inhibits herpesvirus DNA polymerase. *In vitro,* the concentrations of penciclovir and acyclovir that effectively inhibit HSV are comparable (Sutton D, Kern ER, *Antiviral Chem Chemother*, 1993; 4 suppl 1:37).

PHARMACOKINETICS—Systemic absorption of penciclovir after topical application is negligible. Even after application of doses more than 60 times higher than maximum recommended doses of penciclovir cream, the concentration of the drug in plasma and urine remains below the limits of detectability. In infected cells, penciclovir triphosphate persists 10 to 20 times longer than acyclovir triphosphate (Earnshaw DL, et al, *Antimicrob Agents Chemother*, 1992; 36:2747).

CLINICAL TRIALS—In two multicenter, double-blind trials, patients with a history of frequent herpes labialis (≥3 episodes per year) were told to apply a topical drug—penciclovir or its vehicle—within one hour of the first sign or symptom of a recurrence and repeat application every two hours while awake (about 9 times daily) for four days. One trial in 1,573 treated patients found that the time to loss of pain was 3.5 days with penciclovir and 4.1 days with placebo. The time to healing of typical lesions was 4.8 days with the drug and 5.5 days with the vehicle alone (Spruance SL, et al, *JAMA* 1997; 277:1374). The second trial in 1,484 patients found that the time to loss of pain was 3.1 days with penciclovir and 4.0 days with the vehicle, and the time to healing was 4.4 days with the drug and 5.3 days with the vehicle alone (Raborn GW, et al, *Intersci Conf Antimicrob Agents Chemother*, 1996; 36:178). All of these differences were statistically significant. Viral shedding was also significantly shortened in both trials. No studies are available comparing topical penciclovir with topical acyclovir or with oral drugs used to treat herpes simplex infections.

ADVERSE EFFECTS—Topical penciclovir was well tolerated in both studies. The frequency of adverse effects or patient withdrawals for any reason was about the same with penciclovir or placebo.

ALTERNATIVE TREATMENTS—In clinical trials in immunocompetent patients with recurrent herpes labialis, topical 5% acyclovir ointment did not have a statistically significant advantage over placebo. Patient-initiated oral acyclovir (400 mg 5 times daily for 5 days) beginning within one hour of onset did not affect development of the lesion or the time to healing, but decreased the median duration of pain by 0.9 days compared to placebo (Spruance SL, et al, *J Infect Dis*, 1990; 161:185). Oral, intravenous and topical acyclovir have been effective in treating mucocutaneous HSV infections in immunocompromised patients.

RESISTANCE—Acyclovir-resistant HSV isolates with thymidine-kinase-deficient mutations, the most common cause of resistance, are also resistant to penciclovir. Other HSV strains resistant to acyclovir may remain susceptible to penciclovir (Chiou HC, et al, *Antiviral*

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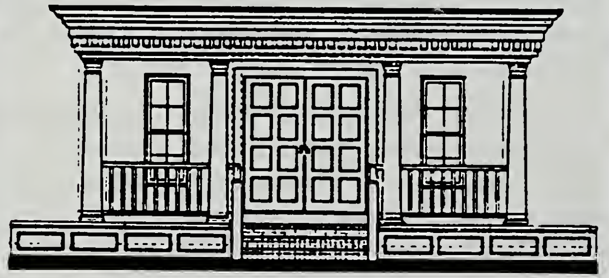
Chem Chemother, 1995; 6:281). The frequency of recovering penciclovir-resistant HSV or VZV strains after topical penciclovir or oral famciclovir therapy has not been reported.

DOSAGE AND COST—Penciclovir 1% cream is supplied in a 2-gram tube containing 10 mg of drug per gram of vehicle. The cost to the pharmacist for one tube is $20.57 according to wholesale price (AWP) listings in Drug *Topics Red Book Update,* June 1997. The recommended treatment, starting with the first prodromal symptoms if possible, is to cover the lesion on the skin every two hours during the day for a period of four days. Application to mucus membranes is not recommended.

CONCLUSION—Frequent application of topical penciclovir beginning soon after the onset of herpes labialis can shorten the time to healing by about a day.



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ANNOUNCEMENT

Medical Music Group Recruiting New Members

The VA-National Medical Recruiting Musical Group is recruiting new members for its chorus and symphony orchestra. Participation is open to physicians, nurses, other health care professionals, students, and their families. Applicants need not be working in veteran health care.

The group's 1997 performance is scheduled for November 8 at the John F. Kennedy Center for the Performing Arts in Washington, DC. The group will then conduct a concert tour of Spain and Portugal, November 9 through 17. Opportunitites will be provided for medical visits, consultations, and lectures at medical centers and schools, as well as meetings with Spanish and Portuguese government officials.

For information on auditions or travel to Spain, call Adella Pocavich at (412) 365-5372; Fax (847) 662-1812; or write Medical Musical Group, PO Box 8337, Waukegan, IL 60085.

Physician-Assisted Suicide: An Unnecessary Crisis

JON FULLER, S.J., M.D.

THE contemporary physician-assisted suicide movement has been propelled by the fear that unless a suicide "escape hatch" becomes available, one's dying could become a painful, alienating experience characterized by inappropriate use of technology, even against one's expressed wishes.

Unfortunately, an avalanche of data suggests that these fears are well founded. For example, despite the five-year, $25 million SUPPORT study designed to identify and correct problems associated with end-of-life care, postintervention observations showed little improvement in physician skills regarding the use of do-not-resuscitate orders, intensive care units, pain relief, or hospital resources. Among the more than 4,000 patients who died in the postintervention phase, 10% received more care than they wanted and 40% had severe pain most of the time. In early June the Institute of Medicine became the latest professional organization to castigate physicians for what it described as "preventable pain and stress at the end of life." In the words of their report: "The experience is so poorly managed by doctors and other health workers, as well as insurers, that many people see death as a degrading, painful episode that leads to talk of assisted suicide."

> *If patients trusted that their physicians would appropriately treat pain and anxiety, there would be no need to look to suicide as a means of escape.*

We should not be facing this crisis. If patients trusted that their physicians would appropriately treat pain and anxiety as they approached death, there would be no need to look to suicide as a means of escape, and this angry and anxious backlash would not have developed. But even if we agree that the fundamental solution to this problem is to provide more competent terminal care, debate is likely to continue, even though the U.S. Supreme Court on 26 June unanimously rejected two Federal circuit court opinions that proposed to grant constitutional status to a right to commit suicide for terminally ill patients.

For the sake of this discussion, I will not treat the more general question of whether suicide could ever be moral. My own belief is that the conditions of our stewardship do not give us control over our own life and death. Here, however, I am not defending that belief but addressing the question at hand, which is whether it is appropriate for society to allow physicians to use their knowledge and power to assist patients who voluntarily request help in taking their lives.

I will argue that even if society believes that in certain circumstances a terminal patient may take his or her own life, physician-assisted suicide should not be permitted for two reasons: First, such a practice could be highly vulnerable to abuse and to conflicts of interest on the part of physicians, thereby causing harm to individual patients. The second, intertwined reason is that granting this power to physicians would sully our subconscious image of the healer, which is the basis of the doctor-patient relationship, and thus threaten the capacity of the community to heal itself. While these arguments might be viewed by some as consequentialist in nature, they are rather based on a virtue ethics analysis that is focused on the question of who we are becoming (as individuals and as a society) as a result

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JON FULLER, S.J., M.D., is assistant director of the Clinical AIDS Program at Boston Medical Center and assistant clinical professor of medicine at Boston University School of Medicine. Reprinted with permission of Jon Fuller, SJ, M.D., and America Press, Inc., *America* 19 July 1997.

of our decisions and actions.

Potential Abuse

If previous experience is any guide, it is unlikely that regulatory oversight will provide a robust limit on the exercise of a power to assist patients in committing suicide, even if the law requires certain procedures, such as confirmation by a physician's colleagues of a patient's terminal status and desire for death. This supposition is based on the experience in the Netherlands of a gradual loosening of legal compliance in cases of voluntary and involuntary euthanasia and on the observation that despite legislation enacted precisely to curb his activities, Jack Kevorkian, M.D., has never been convicted. If it were to become even more risk-free than it is at present for physicians to assist in suicide, it is not so difficult to imagine that some patients would seek out doctors known to have very low thresholds for complying with such requests. After all, if the basis of a legal right to suicide lies in autonomy, one does not have to be nondepressed—or even provide a good reason—in order to exercise that right.

Conflicts of Interest

A second area of concern regards conflicts of interest on the part of physicians. Here I think of two principal sources of conflict: workload and finances. With respect to the former, caring for dying patients can be quite labor-intensive and emotionally draining. It is not difficult to imagine that the stress of providing this care might influence decisions regarding assisted suicide, as was most dramatically documented in the landmark anonymous article published in *The Journal of the American Medical Association* in 1988 entitled "It's Over Debbie." In that report, a physician in training, who describes himself as having come to detest middle-of-the-night phone calls because of how bad they make him feel the next day, gets just such a call to see a 20-year-old woman dying of ovarian cancer. He describes his passage from the on-call room to see her: "I trudged along, bumping sleepily against walls and corners ... not believing I was up again." He comes upon a wasted figure who hasn't eaten or slept in two days and who is starving for air, evidence of a gross failure to provide even basic palliative care. After she says her only words to him, "Let's get this over with," he returns with an intravenous injection of 20 milligrams of morphine, which kills her within five minutes.

When Debbie died his life became easier. Clearly, he was not free of bias in deciding whether to respond to her request. I can attest to the level of stress that a night on call can bring with it and to the negative psychological reactions that such stress can engender. In fact, the deep resentment toward patients that can develop in young physicians as a result of long hours and unrelenting workloads is a major argument in favor of modifying the structure of graduate medical education. But I can also attest that in my 14 years as a physician, despite the short tempers and regressive behavior I have sometimes seen under such stressed circumstances, I have never doubted that the physicians involved were acting in the best interests of their patients despite the personal cost. If suicide became an option that one could offer patients in the middle of the night, it is not clear how an unbiased approach to that option would be possible, especially by an exhausted, irritable physician.

A second potential conflict of interest is financial. Seven-, eight- and nine-figure salaries for the CEOs of health maintenance organizations make it clear that managed care is about making profit by cutting cost, and in this sense it has radically reconfigured the psychology of health-care delivery. "Covered lives," that is, the members enrolled in a plan, are becoming commodities that are competed for, much like a company might try to submit the lowest bid to win a construction contract.

Physicians are increasingly the hired agents of this invisible third party, which may be in the relationship with a patient not primarily for the individual's welfare, but rather to make a profit—which is achieved in part by limiting services. In the worst-case scenario, a physician whose contract with an HMO includes sharing in the financial risk for the cost of delivering care will have a blatant conflict of interest, making it personally attractive to accede to the wish of a depressed patient to end life. As Woody Allen once observed, "Death is a great way to save money."

If I as a physician have something to gain—less work, more sleep, less risk to my financial status—then the request to assist with suicide will not be viewed impartially. In this regard, Dr. Shimon Glick reminds us in *The American Journal of Medicine* of the Jewish Halakhic tradition's insistence that it is permissible in grave circumstances to pray for a suffering patient's demise, as long as one is not directly involved in the care of the patient and thereby vulnerable to having a conflict of interest. This position appears to be consistent with the Hippocratic Oath itself, for after pledging to use one's skills for the patient's benefit, the oath specifically notes that the physician will give no deadly medicine, even if asked. While it has been argued that for some individuals being able to commit suicide would be a benefit, Hippocrates is quite explicit that it is a benefit that cannot be conferred by the physician.

Damage to the Archetype of the Physician-Healer

While my first argument relates to harm to individual patients through abuse of power or through conflicts of interest, my second has to do with potential damage done to the common good. If you will allow me to use Jungian imagery to make what I believe is a very concrete point, I would argue that adding the capacity for actively taking life to the armamentarium of physicians would radically mar the archetype of the physician-healer that is carried in the collective unconscious.

Patients give physicians wide access to intimate knowledge—comparable to the trust given to priests and psychotherapists—and there is no comparison to be made to the dropping of physical barriers that occurs in the relationship. Such unparalleled trust and access is granted on the premise that the patient's self-interest is always the physician's priority, and that no advantage will be taken of the patient's vulnerable position. This is why acting on a romantic impulse in such a relationship must be taboo, lest the personal disinterest of the physician be compromised or doubted.

Society also grants physicians permission to "let go" of life precisely because the physician is theoretically best positioned, given the wishes of the particular individual, to know when and how it might be appropriate to withdraw various levels of support. Society even allows physicians indirectly to hasten death through the appropriate use of medications that alleviate pain and anxiety. In these life and death decisions, we consciously and unconsciously trust that our loved ones are receiving care that has their best interests at heart.

In contrast, participation in the active taking of life, even if only by prescribing medications that a patient will self-administer, crosses a threshold and threatens the trust in beneficence that is the root of the physician-patient relationship. Our collective unconscious must already contend with living memories of the abuse of the physician's power, most notoriously in the Nazi medical experiments and in the Tuskegee project.

I work in an inner-city AIDS clinic, where the majority of patients are members of minority communities. There are also a significant number of immigrants who are unfamiliar with and mistrustful of the Western medical system. Tuskegee is quite prominent in the minds of many of them, as are conspiracy theories that HIV was created by the U.S. Government as a way to wage war on blacks—a position that is not contradicted by the increasingly disproportionate burden of AIDS that is borne by minority communities. Not a few believe that AZT is a poison being distributed as part of a related conspiracy.

Whatever one might make of the historical foundation for these viewpoints, they nevertheless have captured the imaginations of many and account for some of the distrust and suspicion that I encounter, and perhaps for some of the delay that is observed in seeking care until long after learning that one is HIV-positive. If the exercise of power by the physician were now legally extended to assisting patients in taking their lives, I can imagine that this would quite reasonably raise even more serious doubts in the minds of many who are already ambivalent about engaging the health care system. In this regard, Dr. Kathleen Foley has recently commented in *The New England Journal of Medicine* that liberalized assisted suicide legislation in northern Australia has led to an increased distrust of the medical system on the part of aboriginal peoples in the region.

My chief concern is that this communal loss of confidence in the physician's disinterest will not just damage an individual relationship. I believe that it is the power of the doctor-patient relationship as much as anything else that is the source of healing; it is the relationship, the commitment of one to another for the sake of the other, that elicits a power for self-care and integration in the client. Just as the confessional seal must be absolute lest anyone have doubts about approaching the sacrament, so must the public image of the physician not include the power for taking life lest patients have the slightest fear that their provider might not always be acting in their interest. If this relationship that supports self-integration is compromised, so is its power, and this would weaken one of society's most important healing resources.

In the best-case scenario, the physician is viewed by society as a professional who is familiar and comfortable with the ways of nature and with the rhythms and stages of human life, who recognizes the waxing and waning of biological processes, who knows when the tide has changed and it is time to take a different tack, who has the skills and tools to ease the transition to death and to maximize comfort both for the patient and for her family and loved ones.

Helping patients and family members to understand the provision of adequate analgesia and the possibility of withdrawing support as ways of gently succumbing to the power of nature maintains an ethic of dignity and a relationship with the natural order of the universe. If in such circumstances a patient or family member had to contend with anxiety about the physician's personal approach to suicide, or if the family became concerned that the physician might gain personally if a surreptitious request for suicide on the part of the patient were to be honored, this could add an enormous layer of doubt and anxiety about the physician's true intentions and loyalties at a time that is already emotionally freighted: "Is he giving that much pain medicine because it is really necessary, because Mother has asked him to kill her or because he's trying to end her life to save money?"

I am not dealing here with whether suicide in the face of extreme suffering can or cannot be morally justified, a question Prof. Margaret Farley of Yale University has explored. I am proposing rather that, even if justifiable, this should not become the province of medical care. If society decides that the option of assisted suicide should be made available on some basis to terminally ill patients, there is no reason why this could not be provided by an agency created for the purpose. After all, taking one's life is not usually a technically difficult end to accomplish, as the Heaven's Gate tragedy demonstrated.

I would like to believe that my arguments are not simply a self-serving attempt to maintain the public relations image of a profession that has created the very problem we are addressing. My position, I hope, is more concerned with the impact that such a policy change would have on the community's power to heal itself; for ultimately the healer archetype does not belong to the profession, but to the community. It is an expression of our desire for health, for integration, for life. The power we give to physicians is a manifestation of the healing that we desire for ourselves, and "going to the doctor" is an implicit enactment of a desire to be well, to be whole. If we add to the physician's power the capacity to take life, is this not a reflection of communal ambivalence about healing and wholeness versus despair and withdrawal? We must be careful not to let our communal archetype become two-headed, lest we impair our desire and capacity for maintaining health and life.

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M.D. Health Plan Supports Lyme Disease Foundation

NEW "Guide to Tick-Borne Disorders" Launched

M.D. Health Plan, Connecticut's second largest health maintenance organization (HMO) with over 189,000 members statewide, has collaborated with the Lyme Disease Foundation (LDF) on the production of a timely and informative booklet entitled a **"Guide to Tick-Borne Disorders."**

The guide, with an initial print run of 200,000, will be included in the upcoming issue of M.D. Health Plan's quarterly members magazine "Health Matters" and will also be circulated to physicians' practices for their patients use. Copies will be made available to employers and insurance brokers and will be included in all new healthcare contracts. M.D. Health Plan and the LDF have shared the cost of printing and mailing of the guides.

The Lyme Disease Foundation, a full member agency statewide of the Combined Health Appeal of Connecticut based in Hartford, is a national, non-profit organization dedicated to finding a solution to the growing Lyme disease epidemic. According to published actuarial studies there are as many as 20,000 new serious cases and 100,000 new less serious cases plus other tick-transmitted emerging diseases which can be severe including Babesiosis, Ehrlichiosis and Rocky Mountain Spotted Fever each year. Written by the Foundation, the **"Guide to Tick-Borne Disorders"** identifies various ticks, informs consumers how to recognize them, how to remove them, and how to protect against bites. Additionally, it advises on ways to reduce the tick population close to the home.

The Lyme Disease Foundation runs a 24-hour volunteer Hotline at 800-886-LYME. Additional guides are available from this number or (860) 525-2000 or by e-mail from <Lymefnd@aol.com>. M.D. Health Plan, located at Crossroads Corporate Park, North Haven, is a subsidiary of Foundation Health Systems. Inc., the nation's fourth-largest publicly traded managed health care company.

Clinical Education in the Ambulatory Care Setting

MARIA LENAZ, M.D., M.S.

ABSTRACT—New training initiatives in ambulatory medicine are being developed in medical schools and residency training programs due to the need to expand education in ambulatory medicine. Most diagnostic and management decisions are being made in outpatient settings. In this context the perception of what constitutes effective teaching in the ambulatory setting needs to be addressed. The skills of questioning, role modeling, emphasizing general principles, and concept comprehension are similar in both inpatient teaching and outpatient teaching. The approach to problem solving, site of teaching, and provision of feedback may differ from inpatient teaching.

INCREASING numbers of academic health centers have found it necessary to provide facilities where medical students and resident staff can be educated in ambulatory medicine. Ambulatory care has in recent years gained a great deal of momentum. As more community hospitals have entered the arena of tertiary and even quaternary care, and as referrals of insured patients to academic teaching hospitals has declined, it has been necessary for academic health centers to develop their own primary-care systems from which patients can be referred for not only teaching and research purposes but also for revenue.[1]

Ambulatory care education for both medical students and residents is characterized by experiential learning. This process is cyclical. By having a concrete experience, for example, an encounter with a patient, the student reflects on the experience as it develops, and formulates concepts and generalizations from the experience, and subsequently tests those generalizations and concepts in other situations.[2]

Learning is enhanced when students and residents can share with each other their understandings and when they can observe and emulate the thinking and actions of expert role models. It is within this framework that preceptors should pay careful attention to orienting learners and structuring roles for learners appropriate to their levels of training, ability, and to meet their educational needs. As students and residents learn by observing and interacting with preceptors, competent role models with an interest in teaching should be provided. Preceptors should encourage self-monitoring and self-assessments as well as create opportunities for collaborative learning.

Students' attitudes and the overall educational effectiveness after the major curriculum changes that implemented ambulatory care in an internal medicine clerkship has been assessed. There has been a significant improvement of the clerkship experience according to student responses evaluated before and after the curriculum change. Attitudes improved toward a general internal medicine career, without a negatively affecting the overall internal medicine knowledge base.[3,4]

Medical students, residents, and faculty working in collaboration can provide increased access to care for the medically underserved. Engaging in community-oriented primary-health care early in their medical education provided positive learning opportunities for medical students, especially those interested in generalist careers. As a result of an integrated approach both patients and students were talking to each other on a different level that is

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rare in the typical training environment. Patients express a new appreciation of their own role in the relationship, and a new insight into the struggles of the provider. Students have an opportunity to relate to patients as people with lives that have gone on before and will continue after their medical experience. Faculty develop a renewed commitment in the creation of an environment wherein students can discover essential relationships between doctor and patient.[5,6] Hands-on clinical experience is most important for building students' confidence.

As more instruction must take place in the outpatient setting, clinicians must become adept at teaching in this less structured setting. Identifying positive role models and emulating them is an essential component of medical education. Clinical skills, personality, and teaching ability were rated the three most important factors in selecting a staff physician as a role model. The development of primary-care experiences should focus on the selection and or development of preceptors with the identified personal and teaching characteristics.[7,8]

In summary, medical education in the ambulatory care setting is characterized in part by ensuring educational effectiveness while simultaneously providing high quality, cost-effective patient care. In spite of the difficulties faced by ambulatory care preceptors, there are strategies clinical teachers may employ to improve ambulatory-care education. The following strategies have been suggested: employing flexible scheduling appropriate to the anticipated need, orienting medical students and residents to patients, having students and residents do their case presentations in the examination room, and reflecting on one's teaching in order to develop effective teaching methods. Research in ambulatory-care learning has indicated that learners must be given significant roles in patient care and that preceptors must observe trainees as they care for patients so that they can provide them with helpful feedback. By employing these strategies in the ambulatory care setting, educators can accomplish these objectives while simultaneously providing high quality, cost-effective clinical practice.[9]

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50 Years Ago

From *The Connecticut State Medical Journal*

October 1947

Editorials

The Trend Toward Socialism

Many people believe that mankind inevitably will be carried to a system of totalitarian government under which all affairs will be managed by omnipotent dictators. Others believe that there is some sort of reasonable Middle Way by which individual freedom can be "mixed" with socialism. "On the surface," says Dr. Leonard E. Read of the Foundation for Economic Education, "events appear to have borne out the contention that this expropriation or 'socialization' of property might take place peaceably, that is, without armed revolution and civil war. But a closer view reveals that erosion of liberty throughout the world resulted in the two bloodiest wars of all history ... Starting in Germany some sixty years or more ago, the 'interventionism' has grown in popularity in one country after another throughout the world. As *Sozialpolitik,* the Welfare State, a New Deal, or Economic Planning, it is preached and promoted in churches, schools, farm organizations, and business associations as the 'non extremist, reasonable Middle Way.'" In a recent book entitled *Planned Chaos,* Professor Ludwig von Mises of New York University points out why the popularity of this policy is not a safe test of its soundness, why it fails in its avowed purposes and what it does to nations which pursue it. He points out the steps by which a state of affairs is produced which is worse than that which it was designed to correct. First the Government intervenes; then, faced with the failure of this intervention, the Government adds "to its first measure more and more regulations and restrictions. Proceeding step by step on this way, it finally reaches a point in which all economic freedom of individuals has disappeared. Then socialism of the German pattern, the *Zwangswirtschaft* (compulsory economy) of the Nazis, emerges." In considering the alleged inevitability of socialism, this writer points out that the course of human affairs is determined by ideas and that what is needed to fight socialism and despotism are ideas embracing common sense and reflecting moral courage.

It should be plain that socialism cannot be fought effectively by criticizing some of its features any more than it can be defended by praising some of its alleged achievements. It will be remembered that many of our countrymen at the beginning of the Fascist regime in Italy convinced themselves of its merits because the trains of that country were on time. With a similar lack of intelligence there are those who, annoyed or inconvenienced by the actions of capital and labor in this country, believe that the government should intervene and outlaw all strikes. They should be reminded that there are no strikes in the totalitarian state.

The problems of society's organization cannot be dealt with in any such superficial manner. They require deep study and cannot be discussed lightly. Public opinion must, therefore, be remolded by those who indulge in straight and fearless thinking. Unless this is accomplished, the victory of socialism will be inevitable because of a spirit of cynicism and defeatism which will develop in the mass of the people.

The object lesson which a socialized Europe is now presenting should be sufficient for any American to resolve that there will be no further extension here. The physicians of our country should become acutely aware of what is happening to their colleagues in Great Britain, for the present regulatory measures, unless halted, surely will be compulsory tomorrow.

The greatest vision that man has yet experienced is known as the Brotherhood of Man, but the Great Proponent of that magnificent idea certainly did not envisage that the Golden Rule of Conduct could be brought into universal adoption by the methods of the firing squad.

Reprinted from the *Connecticut State Medical Journal*, October 1947.

"The time has come,' says Lecomte du Noüy in his remarkable book, *Human Destiny,* "for all men of good will and of good faith to become conscious of the part that they can and must play in life, if our present Christian civilization is to endure."

Spare Parts?

When a man dies, it means that a part has worn out.

Henry Ford*

The mechanism of decay and death is not quite so simple as Henry Ford's dictum suggests, and it is hardly rational to liken the human body to a "Model T" or even to one of Henry's more recent de luxe vehicles. And yet the quotation contains more than a modicum of truth. Years ago that thoughtful and astute observer James Paget wrote an essay entitled "Errors in the Chronometry of Life" in which he pointed out that all parts of the human frame do not deteriorate synchronously and that, indeed, individual variations in the rate of wear and tear are to some extent hereditary. In his monograph on Angina Pectoris, William Osler cited the Hughes family (Tom Brown's School Days, etc.) as being abnormally vulnerable to coronary artery disease, and there are some families too, to mention just another example, whose members tend to "wither at the top." As illustrations of the minor manifestations of aging, we all know clans whose members develop gray hair or senile skin changes much earlier than average people.

If our tissues and organs all aged at the same rate and all disintegrated at the same moment we would doubtless meet the fate of Oliver Wendell Holmes' wonderful one hoss shay and die, perhaps like one of Dickens' characters, of spontaneous combustion. But nature, aided and abetted by human disregard of the rules of the game of life, doesn't work that way. If it is mere longevity one is aiming at, the main necessity, according to Raymond Pearl, is to pick out a group of long-lived ancestors. Having arranged this, one may smoke or not smoke, drink or not drink and, in general, live a reasonably hygienic or unhygienic life and get away with it.

Aside from the mortality due to neoplasms and the infections, the latter often merely terminal events ending chronic diseases, many of us do die because some particular part has worn out. This statement is obviously an oversimplification in that it suggests that simple mechanical wear and tear are responsible. Throughout life our tissues are subjected to adverse conditions in the form of toxic insults from major or minor infections, from substances purposively or accidentally consumed with food or drink, from tobacco, and even at times from medicine. Indeed, we know quite well that our own malfunctioning organs may produce substances capable of causing considerable damage, just as in a Model T the wastes of combustion are a factor in the etiology of obsolescence. And, it may be added, we are now acutely aware of the effect of psychic stresses.

Were it not that prophets have always been unduly liable to get into hot water, one would be tempted to hazard some guesses as to the possibility of bodily repairs and replacements in the future. Modern surgery has developed to a point where it can correct some malformations, notably circulatory ones, until recently beyond its reach, and invade organs, the lungs, heart and brain for example, that were formerly regarded as sacrosanct. To a limited extent we can now supply missing parts, but whether we shall ever reach a stage in which diseased vessels or damaged organs can be commonly replaced in whole or in part is a moot question. An affirmative answer would mean that the personal columns of our newspapers would be more intriguing than ever. It would be diverting to read that Jane Doe had just returned from the Juneau Clinic with a new aorta or that Jane Roe had acquired a new archipelago of Islands of Langerhans at Mount Ararat Hospital. To be realistic, the likelihood of such performances seems rather remote but—quien sabe?

G.B.

CALL FOR PAPERS

Members of the Connecticut State Medical Society reading papers before other organizations are invited to submit their papers to the *Journal* for consideration. Authors preparing manuscripts for submission to *Connecticut Medicine* should consult **Information for Authors**. This is published in most issues of *Connecticut Medicine* or may be obtained from the *Journal* office. Adherence to the instructions will prevent delays both in acceptance and in publication.

Papers prepared on a word processor should be submitted on a diskette along with the hard copy.

Please send them to:

Robert U. Massey, M.D.
Connecticut Medicine
160 St. Ronan Street
New Haven, CT 06511

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*Quoted by John Gunther, *Inside U.S.A.*

One Hundred Fifty Years of Ethical Standards

When Nathan Smith Davis entered into the practice of medicine in 1845, he was appalled by the paucity of training in particular and the lack of meaningful education, licensure requirements, and ethical standards for the practice of medicine in general.

Dr. Davis did not suffer these perceived inadequacies in silence. His persistence led to a convocation of physician leadership first in Albany, then in New York City, and finally in Philadelphia where, in 1847, responding to demands for national standards in medical education, materia medica, licensure and medical ethics, the American Medical Association was founded.

The first code of ethics was written by Doctors John Bell and Isaac Hayes. This was in every way an historic document dealing at its beginning with standards of conduct. A physician must answer to a patient's call, any patient, without regard to economic or social status or any other factor. A physician must at all times treat patients humanely. And finally, a physician must keep the confidences of each patient. Additional standards were quickly added governing relationships between physicians themselves, and between physicians and the general public. There were included obligations to educate each other and the public in matters of the public health and to provide treatment to the public in times of disaster and epidemic. The latter charge of the code, incidentally, at a time when little was known of the etiology and/or treatment of the epidemics that regularly swept through population centers throughout the country.

In formulating a code and founding an organization that espouses the code is one thing. The real question was would the physicians of the United States embrace it. The answer was a resounding yes. Our code became one of the most widely published and publicized documents of the time. American medicine was on its way—so to speak. There is a core principle articulated by John Bell at work here. A principle of reciprocity, if you will, that if we wished the American public to recognize our status, license us, and allow us certain prerogatives then we had to earn their approbation. And earn it we did. For the next 50 years the American Medical Association and its code of ethics were a paragon for our society.

At the heart of the code is the suppression of self-interest to that of the patient. If we are professionals, then we must declare our dedication to something other than self-interest. Objections have arisen to the basic tenants of the code. Theirs are voices proclaiming there is no need for a code, that it is self-serving, that it is anachronistic.

Our modern code can stand on its own. As Edmund D. Pellegrino, M.D., of the Center for Clinical Bioethics, Georgetown University Medical Center, Washington, D.C., has said, "I do not think we need a new code or no code. We need to recapture the moral grounding for a code of bioethics." The code provides: a vehicle for the transmission of ethical theory into medical practice; a mechanism that forces physicians to be part of an ethical community; a means of passing on a tradition of dedicated service that serves as a help to young physicians; a moral compass to guide physicians through increasingly complex medical thickets; and an indispensable benchmark to define the ends of medicine.

Principles of Medical Ethics

Preamble: The medical profession has long subscribed to a body of ethical statements developed primarily for the benefit of the patient. As a member of this profession, a physician must recognize responsibility not only to patients, but also to society, to other health professionals, and to self. The following capitalized principles adopted by the American Medical Association are not laws but standards of conduct which define the essentials of honorable behavior for the physician.

I. A physician shall be dedicated to providing competent medical service with compassion and respect for human dignity.

II. A physician shall deal honestly with patients and colleagues and strive to expose those physicians deficient in character or competence, or who engage in fraud or deception.

III. A physician shall respect the law and also recognize a responsibility to seek changes in those requirements that are contrary to the best interests of the patient.

IV. A physician shall respect the rights of patients, of colleagues, and of other health professionals, and shall safeguard patient confidences within the constraints of the law.

V. A physician shall continue to study, apply and advance scientific knowledge, make relevant information available to patients, colleagues, and the public, obtain consultation, and use the talents of other health professionals when indicated.

VI. A physician shall in the provision of appropriate patient care, except in emergencies, be free to choose whom to serve, with whom to associate, and the environment in which to provide medical services.

VII. A physician shall recognize a responsibility to participate in activities contributing to an improved community.

Stanley J. Keating, Jr., M.D.
President

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REFLECTIONS ON MEDICINE

Dickens, Osler, and Mother Teresa

ROBERT U. MASSEY, M.D.

WHAT, you ask, could these three have in common except that they were exceptionally good people? Charles Dickens was 37-years-old when William Osler was born, and had begun to write *David Copperfield*, and Osler was 61 when Mother Teresa was born, so for a time Osler could be said to have been a contemporary of each of the other two, although the overlapping years of their lives were miles and oceans apart. The Osler Library included a copy of a facsimile edition of the 1859 edition of *A Tale of Two Cities*, but the two men can hardly have met since Dickens died in 1870 when Osler was only 21 years old and still in Canada. Osler, I am sure, had a special interest in Mr. Cruncher, the resurrectionist, one of the unforgettables among many in that novel.

In *Bleak House* one of Dickens's minor characters, or caricatures, is Mrs. Jellyby whose morality is of the "telescopic philanthropy" kind, whose far off gaze "could see nothing nearer than Africa." She worked night and day for the mission at Borrioboola-Gha, neglecting her numerous children, her poor husband slipping into bankruptcy, her house a mess, cold and smelling of hot tallow, and her cook an alcoholic. "You find me, my dears, as usual, very busy, but that you will excuse. The African project at present employs my whole time.... We hope by this time next year to have from a hundred to a hundred and fifty healthy families cultivating coffee and educating the natives of Borrioboola-Gha, on the left bank of the Niger."

We have all seen these telescopic philanthropists all over the place, but mostly, unlike Mrs. Jellyby, they are often among the well off who can easily afford to farm their children out to expensive boarding schools and their husbands out to nightly board meetings. Nearer home, many of us must confess to our own varieties of telescopic philanthropy, devoting energies to great causes while neglecting families, close friends, and the neighbors next door whose names we often do not know.

Osler denied being a philosopher, "I have never succeeded in mastering philosophy—'cheerfulness was always breaking in.'" But then, misquoting Thomas Carlyle, and, just maybe with Mrs. Jellyby in mind, he said his philosophy was "... not to see what lies dimly at a distance, but to do what lies clearly at hand." He returned to this sentiment over and over, and in 1913 delivered an address to Yale medical students, "A Way of Life," in which he advised them to live "... a Life of Day-Tight Compartments."

> Shut close in hour-tight compartments, with the mind directed intensely upon the subject in hand, you will acquire the capacity to do more and more, you will get into training; and once the mental habit is established, you are safe for life.

Mother Teresa has been criticized for not advocating family planning or other far-reaching social schemes for eliminating poverty and reducing the burden of unwanted or unsupportable children. She worked instead only to relieve human suffering that lay immediately at her feet, one by one, day by day. It seemed she had never heard of the social gospel; like many of us, she probably was never able to find it in the Gospels, where we are bidden to ask only for our *daily* bread, and where, as Osler reminded us, the workers in the vineyard were hired by the day, "and we are expressly bidden to take no thought for the morrow." Malcolm Muggeridge called Mother Teresa and her Sisters in Calcutta "love in action," and love is always one to one, day by day. She summed up her Way, "The greatest scourge is to forget the next person, to be so suffocated with things that we have no time for the lonely person, even in our own family, who needs us."

A physician friend used to tell his residents that doctors were "numerator" people, one patient at a time, each one the most important one in that denominator of 1,000! The one-on-one notion may be easier for us.

Of the three, Dickens, Osler, and Mother Teresa, only she lived almost entirely according to the message that she taught and embodied. Such discipline, in spite of Osler's assurance that once established we "are safe for life," is no easy task. Quoting the 17th-century divine George Herbert, Osler urged the Yale students to "Undress your soul at night," and reminded them that "The load of to-morrow, added to that of yesterday, carried to-day makes the strongest falter." He might have added another Herbert aphorism, "Be useful where thou livest."

ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

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This Month's Reading in Review

TIMOTHY B. NORBECK

"Every major independent study over the last 15 years has reached the same conclusion: that enacting a limit on noneconomic damages is the most effective reform in containing runaway health care liability costs.... A $250,000 cap would also save Medicare $480 million to $800 million over the next five years."

AMA Chair Thomas R. Reardon, M.D., referring to a recent Physician Insurance Association of America (PIAA) study. *American Medical News* (4 August 1997)

According to Jury Verdict Research, the median medical malpractice award rose nearly 14% last year to $568,000—the highest level ever.... The 1996 median is nearly double the 1988 median.... Forty percent of the malpractice verdicts topped $1 million in 1995–96.... Defendants still won more than two-thirds of the cases that went to trial.

Jury Verdict Research Release (July 1997)

"If Moses had gone to Harvard Law School, the Ten Commandments would have been written with 100 grandfather rules and 2,000 special transition provisions."

Wall Street Journal (6 August 1997)

Sometimes it takes people longer to hear things than it should.... The diary entry of King George III of England for 4 July 1776, reads: "Nothing of any consequence happened today."

Statistics (August 1997)

"Newborns discharged within the first 30 hours after birth have an increased risk of rehospitalization in the first month of life."... Researchers estimate that eight out of every 100 newborn rehospitalizations in the first week of life could be prevented with longer hospital stays.... According to the authors of the study, the results support recent legislation that mandates longer hospital stays after birth.

JAMA (23/30 July 1997)

The highest death rate from stroke is in the Southeast.... The stroke belt includes Alabama, Arkansas, the Carolinas, Georgia, Louisiana, Mississippi, and Tennessee. New finding: People living on the coastal plains in Georgia and the Carolinas have particularly high stroke mortality rates.

Based on a study of 400,000 people, including 4,856 stroke victims, published in *STROKE*. *Bottom Line* (15 August 1997)

According to Jeff Schoenberg, State Representative (Illinois): "Unlike physicians, who are trained during their residencies to perform Herculean tasks with little or no sleep, legislators often can take only a cursory look at issues during the latter months of the General Assembly's session. Physicians can make the greatest difference if they volunteer to spend a little time in a relaxed setting where they can discuss complex health care policy issues and give their legislators a deeper understanding of what the issues are and how their patients are affected."

Illinois Medicine (5 September 1997)

Say What? A Rochester, New York, Assemblywoman who is the chair of the Assembly's Alcohol and Drug Abuse Committee, upon her guilty plea in March for driving while impaired: "This will give me additional insights into the problem of drinking and driving, and I believe, will allow me to do my job even more effectively."

Washington Weekly (25 August 1997)

Only in America: According to police in Mesa, Arizona, Jean K. Dooley opened fire with a handgun in Valley Lutheran Hospital in 1995, intending to kill her husband, who was a patient there.... She missed but managed accidentally to hit a nurse and a paramedic.... In January 1997, she filed a lawsuit against the hospital for negligently failing to stop her from bringing the gun inside.

News of the Weird (9 September 1997)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

In Response to Dr. Lenaz's "Managed-care Organizations' Teaching Role: Its Importance in Medical Education"

Letter to the Editor: Its the end-game now. About the last thing we need is managed-care organizations (MCOs) in partnership with medical education. During my education as a neurosurgeon, I recall Dr. Wilder Penfield saying "Keep the businessmen out of medicine." Dr. Maria Lenaz (*Conn Med* 61:427–8), medical director of Oxford Health Plans and clinical assistant professor of OB-GYN at Yale, makes the case for a "mission through collaboration" between academic medical centers and MCOs. Her concerns include "a changing healthcare marketplace," "capitation as well as other financial models," "alternative levels of care and associated cost structures," as well as the need "to improve the morale" of providers.

I'll bet a dollar Dr. Lenaz knows why many physicians are in need of improved morale. As physicians surrender our profession to the business interests of managed care, Dr. Lenaz expects our morale to be boosted by the very same organizations aimed at turning a profit. We have lost power, but we will be tranquil in the knowledge that the youngest physicians in training will keep their eyes fixed on the economics of medicine. Does Dr. Lenaz not know that many of us regard capitation as an emetic? Does she really believe that managed care, once inserted into the formal education of young physicians, will not aim to manage all it surveys, for the benefit of its CEOs and stockholders?

I confess I found Dr. Lenaz' argument unencumbered by truth. What sort of physicians will academic centers in bed with MCOs produce? I suppose Dr. Lenaz is just doing her job as Medical Director of Oxford Health Plans. It's only natural to want to "get along" and "go along"… isn't it? Why not persuade students that the "mission" of managed care can be fused to institutions of medical education? Just think! The Oxford-Yale Business School of Medicine!

Few would argue with her assertion: "HMOs view academic health centers as fragmented with divisional fiefdoms and expensive in providing health care services." I do not dispute her contention that "MCOs have much to gain by becoming more involved in the education of medical students and residents." MCOs will own them, lock, stock, and barrel, by repaying the cumulative debts of modern medical education, while emphasizing the money it costs to do this or that. Students and residents might be trained to examine patients and their differential credit-worthiness, providing "alternative levels of care," from excellent to denied.

It is obvious that HMOs and MCOs regard all of us, academic and nonacademic, as divided, hence fair game. Being divided does mean independence of spirit, in spite of the specter of the Monolith. Who wants to be a spoke in the wheel?

Charles W. Needham, M.D., F.A.C.S.
Norwalk

Are Physicians Afraid to Criticize Their HMOs?

Letter to the Editor: HMOs now have the power to fire doctors. It used to be called "deselection," last year our legislators changed the language to "termination." Call it what you will, HMOs can fire you.

Since the majority of physicians' patients are enrolled in HMOs, this power, concentrated in the hands of those whose interests are commercial, not medical, whose primary allegiance is to stockholders and profits, not to doctors and patients, is very dangerous.

By having the power to fire doctors and thus holding their livelihoods at risk, HMOs can force them to comply with policies that undermine the traditional principles upon which medicine is based.

Statistics on dismissals are not necessary to point out the obvious fact that most physicians prefer not to criticize HMOs' policies. This is why physicians are critical of HMOs in private and reticent in public.

Being worried that their HMOs can fire them greatly disadvantages physicians' participation in the health reform process. On the other hand, it has given HMOs great freedom to pursue their own interests. Thus, we have seen medicine profaned by incentives to undertreat and by destruction of doctor-patient relationships. Clearly, for HMOs, stockholders' interests are more important than either patients' or doctors.'

When physicians are browbeaten to the point that they are afraid to defend the principles of their profession because it means risking their livelihood and their families' security, something is very, very wrong. HMOs' power to fire doctors is unjustified. It has too much potential for abuse. It is bad for patients. It is bad for doctors. It is bad for medicine.

Outcomes analyses, cost control systems, and clinical guidelines, as important as they are to health-care reform, are not enough. We must have peace of mind to criticize health-care reform as we see fit. We cannot allow HMOs to intimidate us so that we do not speak out in defense of medicine's core values.

Fear of losing our jobs for criticizing HMOs' policies is the most menacing of all the HMO by-products to seep into the bloodstream of American Medicine. The time has come to look for an antidote.

We must bring this issue to our legislators' attention.

Edward J. Volpintesta, M.D.
Bethel

(Mis) Use of Board Certification

Letter to the Editor: It is quite appropriate that Dr. Volpintesta become vexed over the (mis) use of board certification as a prerequisite for HMO membership.[1] It is a false appraisal of clinical competence. However, it is not just health-care companies that pervert the significance of certification. There are members of our medical academic community who also believe that skill and knowledge exist only in "boarded" physicians. (Having multiple boards seemingly would impart almost epiphanic powers.)

A decade ago two Connecticut physicians published in a highly touted medical journal an article decrying Hartford area specialists who were not board certified.[2] Of course such piffle was promptly parroted by our local news media. A great plague of incompetence had befallen our state capital city. (Politicians apparently had natural immunity!)

While wondering if the good citizens of Connecticut had funded this "research," I awaited physicians and medical societies to denounce this pseudoscience. But much to my chagrin and, undoubtedly, other doctors', there was no outcry, rebuke, or rebuttal. Only, "... the voice of the turtle (was) heard in our land." I would say to Dr. Volpintesta that this professional autism was tacit approval of the HMO requirement of board certification.

In fairness to The Hartford *Courant,* it did publish (6 June 1987) a portion of a lengthy rebut which I wrote to the editor. (While I'm no "voice of the sluggard," health insurers do regard me as "The voice of one crying in the wilderness. ...")

As emphasized by Dr. Volpintesta the specialty boards were never meant to impugn physician competence. Today I doubt board certification has any estimable attributes. The current pass rate in internal medicine is about 85% with foreign (international) medical graduates having less success. (Compare that to the medicine boards 30 years ago which were taken in two parts: A written exam and, if passed, an oral session one year later. The success rate was about 50%.)

Are today's board certified physicians superior to those without certification? A survey of malpractice suits would indicate otherwise (CMIC personal communication). Clinical competence and compassion do not exude from a board certificate. All physicians are keenly aware of colleagues who are book-proficient but clinically deficient; who can't distinguish bruits from burps nor asthma from passion.

Some 35 years ago Dr. Joseph Wassersug humorously pointed all this out in an essay entitled, "The Sheep in the Ivory Tower."[3] The last line of that piece counsels "... the value of sheep lay in the quality of the wool they produce and not in the Boards they display." I recommend this opusculе to all physicians; especially the more hubristic.

Younger physicians now facing decades more of corporate directed health care would serve their chosen profession and the patients well by rebuking the dubious standards of competence (ie, membership) promulgated by HMOs and others of their ilk. "An event has occurred of which it is difficult to speak but impossible to remain silent," wrote Edmund Burke, the Irish statesman. Indeed, it is time that the voices of the (medical) turtles are heard. Horrah for Dr. Volpintesta for starting the chant.

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Lee Sataline, M.D.
Cheshire

In Response to Two Articles in the July Issue of *Connecticut Medicine*

Letter to the Editor: Re: 1) "Armorers and Barber Surgeons ..." and 2) Danbury Hospital's Abstract: "Effectiveness of a Weight-based Heparin Nomogram ..."

1. No article relating to the historical aspects of surgeons and war wounds should omit mention of the first book on the subject, published by Hieronymous Brunschwig, in 1497, in the Alsatian language (Garrison, *History of Medicine*, 1929). Interesting in particular is the description of the use of a magnet to remove metallic fragments from the eye.

2. Although the weight-based nomogram would appear to be an improvement over standard uniform dosage methods, it is well to remember that in most instances it is

not overall body weight but lean body weight that correlates best with dosage. Lean body weight also correlates with the size of the vascular network where heparin does its thing. As noted in Cecil's *Textbook of Medicine*, 1996, the problem of dosage is particularly difficult with advancing the relative proportion of fat increases; and, since fat is metabolically inactive, it is capable of changing dynamics due to storage and accumulation problems. Although the literature on weight-based dosage of heparin is both recent and sparse, basic physiological concerns noted above are time honored and should not be ignored.

The brief report does not state whether the difference between 50% and 60% response is statistically significant; it does not mention whether population groups were equalized; it is unfortunate that the standard dosage method and the weight-based method were not run at the same time, since it would have eliminated a host of experimental factors that cannot be discussed at this time. We should bear in mind the fact that the article was a very limited description of the overall effort.... certainly a step in the right direction.

Norman M. Canter, M.D.
New York, NY

Two Scales Are Almost the Same as One

Letter to the Editor: Recenty we were faced with a problem during a clinic visit with a patient weighing >340 lbs. He was being treated for his weight problem, but we were unable to weigh him because the upper range of our scale was 300 lbs. A suggestion that two scales could be used and then added together was entertained.

A search of the literature revealed several articles supporting the technique.[1,2,3]

Utilizing two bathroom scales with a maximum capacity of 250 lbs we asked 11 volunteers to be weighed in this fashion.

We immediately noticed that having the volunteer open his stance to the outer edge of each scale gave a better balance, minimizing the fluctuation in the readings.

We took the readings from both the scales, added them together and then weighed the volunteer on one scale for comparison. The results are tabulated below. One volunteer weighed 348 lbs and had to be confirmed on the hospital laundry scale (range up to 1,000 lbs). We feel that the variation up to 5 lbs is acceptable and that patients over 300 lbs could be weighed without using expensive equipment or without going to the hospital laundry room. More importantly the patient could monitor him/herself at home.

Searching the literature and finding the technique exclusively in specialty journals prompted us to submit our letter to a general medical journal.

We would welcome suggestions concerning this technique.

Thomas Samuel, M.D.
J.J. Falsone, M.D.
Beulah Hinds Center
Norwalk Hospital
Norwalk

Table.—Volunteers

Scale #1 (lb.)	Scale #2 (lb.)	Scale #1 + scale #2 (lb.)	Correct weight (lbs.)
90	68	158	158
75	95	170	170
74	96	170	170
76	60	136	135
120	86	206	205
85	84	169	166
62	91	153	153
60	61	121	120
94	115	209	209
80	82	162	161
172	176	348	348

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From the Executive Director's Office

COUNCIL MEETING

Wednesday, 27 August 1997

Attendance

Present, in addition to the chairman, Dr. Joseph Sadowski, were Drs. Beck, Bigos, Bobruff, Brooks, C. Czarsty, J. Czarsty, Deren, Eslami, Fischbein, Franklin, Geary, Herzog, Kamens, Katz, Keating, Lesnik, McDonnell, Montegut, Mushlin, Narayanan, Redmond, Scarpa, Timmerman, Van Linda, and Wetstone.

Also present were: Drs. Ahamed, Parke, Genel, Thompson, Mr. Norbeck, Ms. Lindquist, Mr. Brunell, Ms. Morelli, Ms. Norbeck, Mr. Staples (all CSMS staff), Mr. Thompson (FCMA staff), Ms. Debiase (HCMA staff), Ms. Harney (NHCMA staff), and Ms. Snider (New London, Middlesex, and Windham Counties staff).

Absent were: Drs. Handelman, Maloney, Schwartz, Sindwani, Sosa, Tesoro, Watson, Wesler, Wolfson, and Zeppieri.

Reports of Related Organization

CSMS-IPA: Dr. David Thompson, Jr, President of the CSMS/IPA reported as follows:

That the CSMS-IPA, a wholly owned subsidiary of CSMS will be undergoing a rather drastic change by 1 January 1998. Foundation Health System, the parent company of M.D. Health Plan, has purchased Physicians Health Service. Medical management for all members of the new company will be entirely under the control of the Chief Medical Officer of M.D. Health Plan. The CSMS-IPA will be the IPA for all members of the new company. The combined members of PHS, M.D. Health Plan and some Foundation Health System PPO members will exceed 600,000 by 1998.

At present CSMS-IPA physician providers will be able to see all members of PHS. No additional applications or paper work is necessary. All present providers of PHS, who are not providers with the CSMS-IPA, will be allowed to join, and the membership fee will be waived during the transition period. Presently, a letter aimed specifically at the Fairfield County physician group, is being mailed in an attempt to recruit them as CSMS-IPA members. To see any of the members after a brief transition period will require the physician to be a member of the CSMS-IPA.

All policies and procedures will be present policies and procedures of the CSMS-IPA. All physician members of CSMS will be invited to join. Any willing physician may join. CSMS-IPA believes in open access and will be transitioning the new members to the open access format as contractual arrangements allow.

It was reported that some procedures are not well liked, however, they have all been set by the Board of Directors of the CSMS-IPA which is composed entirely of practicing physicians representing the county and state medical associations. All decisions are made by physicians and when incorrect can be changed by physicians. The IPA has total control, but has to live within a budget.

The CSMS-IPA has commissioned an actuarial firm to evaluate overall utilization. It was found that the imaging expenses were almost double what they should be on a per member per month basis. After extensive interviews and presentations, National Imaging Associates was selected to help with the overutilization problems. Initially, they will be credentialling all imaging providers. Some small scale providers may not be providing the quality necessary to meet the standards that have been set. Laboratory costs are also be reassessed. Physician-performed tests soon will be paid at a level equal to hospital labs. It is expected to continue the present lab provider network but at a reduced cost to the IPA.

It is felt that this changeover is going to put CSMS and its wholly owned subsidiary IPA in a more advantageous position to influence the way that managed care is conducted in the state because there will probably be 20% of the population in the state under the care of the CSMS-IPA by the end of 1998. With that kind of penetration and with CSMS and the IPA at the helm this would allow the CSMS-IPA to be able to influence the way medical care is practiced.

CPRO: Dr. Kamens reported that CPRO is involved in over 30 voluntary quality-of-care projects at the present time. As of now these are not all hospital based, four are in outpatient settings and three are in nursing homes, with others planned in nursing homes.

A newsletter is being published by CPRO outlining their activities and will be available to hospital leadership, specialty societies, and any one who has an interest can request to be put on the mailing list. A quarterly page in *Connecticut Medicine* on topics of interest in quality of care has been instituted and will be written by the medical director.

Bob Brunell, CSMS Director of Scientific Affairs, has placed CPRO on a speakers' panel for the CME conference in the fall.

CPRO is instituting a series of projects with the medical education directors of the various hospitals which will provide CPRO with hospital data and state aggregate data so that they can do their own comparison.

Report of the President

Dr. Keating reported that a meeting has been arranged with the Commissioner of Insurance which will be held in September. Tim Norbeck, Mag Morelli, and he will meet with the Commissioner to discuss the managed-care bill that was passed to see if they can assure that the expectations of the CSMS membership are met and implemented.

He also discussed the initiative by the Committee on Legislation and the Committee on Public Affairs to develop a media campaign to promote the medical profession which will be an outgrowth of the experience of the last several years in the legislature. CSMS has retained a public relations firm to develop a media campaign entitled "M.D. Makes the Difference" with the emphasis being on the M.D. portion of the slogan. It was decided to target the media, which report on medical activities and the general public who may have difficulty in making the distinction between M.D.s and various others who call themselves doctors.

Report of the Executive Director

Mr. Norbeck reported that the American College of Physicians and the American Society of Internal Medicine have agreed to merge late next year and if approved by the governing bodies, will be called the American College of Physicians-American Society of Internal Medicine.

In a blow to patient advocates, California Governor Pete Wilson has announced that he will not sign any of the comprehensive managed-care reform bills passed by the California legislature. He wants a task force of "experts," which means insurance people, to determine what should pass.

Governor George Pataki recently signed a bill requiring insurers to cover chiropractic care in New York. The legislation requires insurers to cover up to 15 visits per year. The restriction of 15 visits will be lifted in two years. Governor Pataki vetoed the same bill last year. However, the chiropractic groups spent $100,000 on a "hired gun" lobbyist in Albany and contributed $370,000 to Pataki and other legislative power brokers to ensure its passage. This is a perfect example of how political action can work for or against you.

The Treasury Department has reported that the early returns of the Medical Savings Account (MSA) project established one year ago under the rules of the Kassenbaum/Kennedy Health Insurance Reform law are quite low. The legislation created a 750,000 person cap, only 7,383 people have established MSAs as of May. Golden Rule says they signed up that many through last month. Twenty-six carriers are offering MSAs. The low numbers are attributed to a long learning process. At least two states, Connecticut and Wisconsin, have a conflict between federal and state insurance laws, so nothing has been done in those states. The recent federal budget agreement allows for a pilot Medicare program to include up to 390,000 Medicare patients for MSAs.

He reported that there was encouraging news from Arizona. Legislation will be introduced in January which would allow HMO policyholders to sue their insurers for care decisions. It is similar to the recently passed Texas legislation.

Nomination for Vacancy on AMA Delegation

Although all county presidents were notified of the vacancy on the AMA delegation and asked if they wished to submit a nominee for consideration, only four counties responded: Fairfield, New Haven, Middlesex, and New London Counties. The nominees were Frank R. Scarpa, M.D., Greenwich, David W. Parke, M.D., Wallingford: and Michael M. Deren, M.D., New London. Two counties submitted the same nominee. By closed ballot vote, Frank J. Scarpa, M.D., Greenwich: was elected AMA delegate to fill the unexpired term of Jerome K. Freedman, M.D., who resigned.

Report on House of Delegates Attendance

At the last Council meeting, the statistical report on attendance at the House of Delegates was referred to the Subcommittee on Annual Meeting Arrangements for study. Dr. Keating, as chair of the subcommittee, reported that the committee met and that no firm decisions were made at its first meeting and no attempt is being made to make any changes in the semiannual meeting which will be held in November. There will be formulated a survey document that will be sent to all delegates and alternate delegates to the House of Delegates in an effort to get an idea of what might appeal to the delegates. He stated that anyone who wish to involve themselves in the formulation of this document or had any suggestions could do so by calling the CSMS office. It was also proposed to have the questionnaire available at the semiannual meeting. The report was received as information.

Legislative Report

Dr. David Parke, Chair of the CSMS Committee on Legislation, made the following report:

That CSMS is preparing a member mailing on the federal budget agreement which has many changes in the Medicare program. The budget also has appropriated money to the states to expand their Medicaid coverage for children and Connecticut is expected to receive $36 million in the first year.

That he and the CSMS past presidents were on hand to witness the ceremonial signing of the Managed Care Bill. Also on hand was Kristen Zarfos, M.D., who was in attendance to witness the mastectomy bill signing. CSMS has been involved in the working group that has been assisting the Insurance Department in developing a process for initiating the expedited utilization review process for extending a hospital stay that is contained in the Managed Care Bill. All of the regulations concerning the extending of a hospital stay and other aspects of the Managed Care Bill that will be implemented on 1 October will be mailed to the membership in a newsletter that is currently being prepared.

The Medical Examining Board began hearing testimony on the issue of who should be able to use lasers for the purpose of hair removal. As was discussed at the last Council meeting, CSMS will testify next month in favor of keeping it within the scope of the practice of physicians. CSMS will be represented by Steven Kolenik, M.D. and David Leffell, M.D., from Yale.

Preparations being made for the 1998 session were also discussed.

Resolution Re: Managed-Care Legislation

Mehdi Eslami, M.D. presented the following resolution:

"Resolved: That CSMS, in cooperation with the county medical associations, publicize recently enacted managed-care legislation to all practicing physicians in the state regardless of their membership in the state or county associations.

Prepare an abstract brochure of all applicable sections of the law related to enforcement such as report card, patient's appeal, hospital stay, and all other regulations pertaining to the provider and patient's rights.

Supply physicians with sample document of reporting cases of violation by managed care to the insurance department providing telephone numbers of the insurance department and department responsible for enforcing compliance.

Encourage physicians to tell the patients to file complaints with the insurance department when they are denied benefits or have other problems receiving benefits.

Neil Brooks, M.D. added a fiscal note of $10,000 to implement the resolution.

During the discussion of the resolution, Mr. Norbeck pointed out that 90% of the actions requested in the resolution were already being carried out, with the exception of a brochure. It was suggested that the sample form for reporting cases of violation by managed care be developed by CSMS and should be no more than one side of a page and could be printed in every issue of *Connecticut Medicine*, whereby the physician could tear it out and fax the information to the insurance department with a copy to CSMS.

It was VOTED to approve the resolution with the addition of the fiscal note.

Date of Future Meetings

Semi-Annual Meeting House of Delegates:
Wednesday, 12 November 1997

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Address of the Executive Director

CSMS Annual Meeting—House of Delegates

14 May 1997

TIMOTHY B. NORBECK

THIS is indeed a wonderful day for the House of Medicine in Connecticut. As CSMS outgoing President Mike Deren has reported, we are undertaking a bold new initiative to help physicians cope with managed care.

I am reminded of a very relevant story of a king who posed the same problem to each of three wise men. "This island where we live is about to be inundated by a huge tidal wave," he told them, "and I need to know how you would advise the people."

The first wise man said: "Sire, I would lead the people to the highest point of the island and set up an all-night prayer vigil." The second wise man responded: "Master, I would advise the people to eat, drink and be merry, for it would be our last opportunity to do so." The third wise man replied: "Your Majesty, I would advise the people to do their best to learn how to live underwater."

Our new MSO program will help you do just that. As President Deren mentioned earlier, our feasibility study revealed that Connecticut physicians want help with billing and collection, computer systems, electronic medical records, outcomes, group purchasing, managed care contracting and negotiating, integration assistance, information systems, and IPA infrastructure support.

There is no question about it. We at CSMS must stretch ourselves to the limit to provide the services our physician members require to survive and practice productively under managed care. We must do whatever it takes, and this we will do.

Setting up an MSO is a natural thing for CSMS to do. And physicians will respond to it, I know, because our membership knows that it can rely on us. CSMS is sensitive to your needs – their needs, and the reputation and integrity of this organization have never been in doubt.

And you and your colleagues know that we exist to serve you and to help you do a better job for your patients. Others who see physicians as dollar signs talk the talk, but you get the truth from us and we walk the walk. And we practice what we preach.

The story is told about a charismatic leader who aroused a whole continent and indeed the consciousness of the world, a man who practiced what he preached—The Great Soul, Mahatma Gandhi.

A woman brought her son to Gandhi and said, "Please, Master, tell my son to stop eating sugar." Gandhi looked deeply into the boy's eyes, and then said to the mother, "Bring your son back to me in two weeks." "But, Master," she said, "we have come on a long journey to be with you. Please do not send us away. Please tell my son to stop eating sugar."

Once again, Gandhi looked deeply into the boy's eyes, but, once again, he said, "Bring your son back to me in two weeks." Two weeks later, the mother and son returned. She said, "Please, Master, tell my son to stop eating sugar." Gandhi looked deeply into the boy's eyes, and said, "Stop eating sugar." The mother said, Oh, thank you, Master, thank you. But please tell me why did you send us away? Why didn't you tell my son to stop eating sugar two weeks ago when we were here?"

And Gandhi replied, "Two weeks ago, I was eating sugar." As jazz legend Charlie Parker once said, "If you don't live it, it won't come out of your horn!"

Our MSO may not be the answer to all physicians' prayers, but it will be the vehicle to put you and your colleagues in a much better position to deal with managed care organizations. Speaking of prayers, I am reminded of a woman who approached a priest and told him of her problem. "Father," she said, "I have these two female talking parrots, but they only say, "Hi, we are ladies of the evening. Do you want to have some fun?"

"That's terrible," said the priest. "Bring them over to my house, and I will put them with my two male talking parrots whom I have spent many hours teaching them how to say their prayers. I'm sure that my parrots will have a positive influence on yours and will help them to stop saying that terrible phrase—and your parrots will also learn how to pray and worship." The woman was overjoyed.

So the next day, she brought the female parrots to the priest's house. The priest's two male parrots were holding rosary beads and praying in their cage. The woman put her female talking parrots in the cage, and they said, "Hi, we are ladies of the evening. Do you want to have some fun?" One male parrot looked at the other male parrot and said, "Put the beads away. Our prayers have been answered!"

One of the real dangers of physicians signing up with those other practice management companies – organizations that have no real allegiance to physicians but do see the dollar signs—and can and do often change the rules - is that physicians will become so splintered in this state and others that they will lose their sense of camaraderie, their voice, their unity, their strength. If we let that happen, physicians will become indentured servants—and what will happen to your patients? As Shakespeare said in King Henry V: "Tis true that we are in great danger. The greater therefore should our courage be."

We must do this now, because if we talk of doing it one of these days, we must remember: One of these days is none of these days. As the English poet Chaucer once said, "Time and tide wait for no man." The window of opportunity will not be open much longer. For all those physicians in medicine today, the tide is upon us. And the time to seize the future—is now. As Peter Drucker observed: "The future will not just happen if one wishes hard enough. It requires decision—now! It imposes risk—now! It demands allocation of resources, and above all, human resources—now! It requires work—now!

The battle for managed care I will get to in a moment, but the issue of tort reform also looms large. Support is growing in Congress for such relief, but we still have too many lawyers in the U.S. Senate and are a few votes short. As you know, the House of Representatives passed substantial tort reform last year, but it was blocked in the Senate. And this year in Connecticut we had to beat back the efforts of trial lawyers who wanted to open up our statute of limitations.

And since I'm on the subject of trial lawyers, I'm reminded of a very aggressive trial lawyer who was cross examining a coroner. The attorney asked, "Before you signed the death certificate, had you taken the man's pulse?" The coroner indicated that he hadn't. The attorney then asked if he had listened to a heart beat. Again the coroner indicated that he hadn't. "Did you check for breathing?" asked the attorney in louder and harsher terms. "No, I didn't," responded the coroner. "So when you signed the death certificate, doctor," the attorney continued, "you had not taken any steps to make sure the man was dead, had you?"

By this time, very tired of the brow beating, the coroner replied, "Well, let me put it this way. The man's brain was sitting in a jar on my desk, but for all I know, he could be out there practicing law somewhere."

Doonesbury comic strip artist Gary Trudeau put it another way in one of his strips. A Pentagon spokesman was trying to explain to a Senate subcommittee on civil defense that life would still be possible after an all-out nuclear attack. "Sixty percent of the economy could be reconstituted within 24 months," the general testified, "unless, of course, a disproportionate number of trial lawyers survive."

The tide is turning on managed care reform. At the Congressional level, many are seriously looking at reform measures in Washington. Two months ago in Philadelphia, Drs. Mike Deren and Stan Keating, Bob Brunell and I heard Secretary of Health and Human Services, Donna Shalala, tell of her AMTRAK trip from Washington. "When the passengers discovered that I was on board, they lined up 10 deep in the aisles," she said, "all of them complaining to me about their treatment under managed care."

After concluding her formal remarks, she noted that she had actually given an entire speech without mentioning the word "provider." And then she added that "I have never met a young person who told me that he or she wanted to go to "provider school."... Have faith, they are finally learning something in Washington!

A sizable and powerful coalition has come together, comprised of consumers and caregivers alike, led by your CSMS, which has proposed substantial reforms. The proposals would make managed care plans more accountable and responsible, give patients and physicians more rights, create an appeals body, end gag rules, cover emergency-care expenses of a prudent patient, and make it clear that a doctor—not some faceless clerk with an 800 number—must make the decision to deny or limit care.

Even the venerable *New York Times*, after years of silence, has finally come out and said that lawmakers should move forward with reasonable protections for the millions who must live by managed care's rules.

It is gratifying to see so many physicians appear at the hearings and forums around the state, and to hear them speak so eloquently and sincerely on behalf of their patients. Our press conferences have also been well-attended, and one can sense the changing mood in Hartford.

And having one of our very own Connecticut physicians introduced on national television by the President of the United States, while she was seated next to the First Lady, has not hurt our cause at all! Dr. Kristen Zarfos has helped to focus attention on these issues.

Working hard for managed care reform requires a commitment of time, energy and sacrifice. But a lot more than the variety endured by a fellow who walked into a bar and ordered three pints of beer, and sat in the back of the room where he sipped out of each one in turn. When he finished them, he returned for three more.

The bartender, a friendly chap, mentioned that a pint goes flat quickly, and wouldn't he rather have him draw the fresh ones one at a time.

The fellow replied that he had two brothers, one in Ireland and the other Australia. "When we all left home," he said, "we promised we'd drink this way to remember the good old days when we drank together."

After a while, the fellow became a regular in the bar, and always drank the same way. But one day he came in and ordered only two pints. When he went back for a second round, the bartender said: "I don't want to intrude on your grief, but I wanted to offer my condolences on your great loss."

The fellow looked confused for a moment and then a light dawned in his eye. "Oh, no," he replied, "it's just that I gave up beer for Lent." No, the kind of sacrifice we're talking about requires a greater effort than that!

I continue to believe that the "fiduciary responsibility" issue is what really resonates with the public. The for-profit managed care industry has a fiduciary responsibility to maximize profits for its shareholders and those investors do have every right to expect that from management. But the rub is: "How can we be certain, short of regulations, that management will not place such considerations ahead of needed and compassionate care? The answer is, of course, that we can't. And that is why we are all involved.

We will get managed care reform this year - how much will largely depend on how active physicians and their patients are in this fight.

Managed care at its best provides high-quality care, and physicians and patients do not oppose it as such. But as you well know, quality patient care has been compromised at times by a sinister and insidious rationing of care by hassles, delay and red tape—often by those who cannot spell or even pronounce the procedure.

As you also know, it is the nature of the managed care business that company executives see many statistics but few patients. Only physicians and other caregivers see all the patients, one at a time and up close. Good patient care is intensely personal.

Unlike the caregivers, the health plan managers are all too often distant and insulated from the consequences of their actions – actions that can subvert medical judgment and undermine the doctor-patient relationship. Patients are sick people who are forced to trust, and all of us are patients sooner or later. And too many of us come to discover too late that what the large print giveth, the small print taketh away.

Not all, but many insurers would have us believe that all is well with patients—that complaints are merely anecdotal and that managed care is working just fine, thank you, and doesn't need any reform.

An argument much like the policeman who examined the body in an alley and said cheerfully: "Two wounds are fatal, but the other one is not so bad." This dark side of managed care is what we fight, along with any insurer who is unwilling to compromise for the sake of good quality patient care.

And it is imperative that physicians remain united as we see this reform battle through to its conclusion. Mark Twain said that "Every crusade needs a devil."

With that quote in mind, let me recount a very relevant story written by R.D. Blackmore of "Lorna Doone"—how the Doones, who had fallen under the displeasure of the government, had taken refuge in the Doone Valley. Encircled on all sides by precipitous mountains, from the fortified position they levied the blackmail upon the surrounding country, killing and robbing and so outraging the people of the land that the citizens grew determined to oust them.

Well, the men of the eastern country gathered together on the eastern mountain, and the men of the west on the western mountain, with all the arms and cannon ready to be mobilized against the Doones in the effort to destroy them. But suddenly and by accident, from the west, a cannon not yet aimed properly fired across the valley into the ranks of those on the east. Damage was inflicted, and in retaliation, those in the east fired back. And while these misguided people continued to slaughter each other needlessly, the Doones went on their merry way, plundering and killing for years to come. Let us heed that lesson. Our adversaries are in the valley. Let physicians train their guns a little lower! It's time for us to turn to each other, not on each other.

We must do everything possible to make sure that physicians stay together and do things to support the people and the medical societies that stand up for them.

One of the greatest of all Americans, Abraham Lincoln, often attended the New York Avenue Presbyterian Church on Wednesday evenings when he was President. Isn't it amazing that life was so simple back then in the 1860s that he could actually slip out through the side door of the White House and in through the side door of the church without an entourage of Secret Service!

He chose Wednesday evening so as not to disrupt the worship service, and the pastor always left his study open when he knew the President was coming, so Mr. Lincoln could sit in the study off to the right of the sanctuary, leaving the door open a bit, and listen to Dr. Phineas Gurley.

On a particular Wednesday, while walking home, Mr. Lincoln's aide asked his appraisal of the sermon. The President, thoughtful in his reply, said: "The content was excellent.... he delivered it with eloquence.... he put hard work into the message...." "Then you thought it was a great sermon?" asked the aide, "No," replied Mr. Lincoln.

"But," interrupted the aide, "you said that the content was excellent.... it was delivered with eloquence.... it showed much work." "That's true," Mr. Lincoln said, "but Dr. Gurley forgot the most important ingredient. He forgot to ask us to do something great."

I won't make that same mistake. I would ask you and your colleagues not to measure your participation in organized medicine and the Connecticut State Medical Society by what you've done, (although you have already done a great deal) but by what you could have done and still can still do. We need your help and support. Keep us strong and united so we can keep you strong and united. We greatly appreciate what you have already done, make no mistake about it, but we need your help – particularly later this month and possibly early June when we will desperately need calls and letters from you and your colleagues and patients to your legislators. Significant managed care reform won't happen without it.

It is easy to get discouraged when we think of our adversaries, and the money and power they wield.

We can take heart in the most recent Lou Harris poll. When asked "who does the best job serving the consumer," medical doctors were at the top of the list with 83%. In the bottom three were health insurers at 55%, managed-care companies with 51% and tobacco companies at 34%.

In another survey done by Greenberg Research Inc., 67% of the public supported comprehensive standards for managed care companies which would limit their ability to deny procedures, require consumer information and shift profits to medical care. I would add to that by saying that the other 33% probably didn't understand the question.

These are difficult days, but we will get through them. As Winston Churchill said during the most perilous of all hours of World War II, "Do not let us speak of darker days; let us rather speak of sterner days." "These are not dark days; Churchill went on "these are great days—the greatest days our country has ever lived, and we must all thank God that we have been allowed, each according to our stations, to play a part in making these days memorable."

In closing, when the history of the Connecticut State Medical Society is written, let it be said that we stood up for physicians and patients and protected the public health; let it be said that we were good stewards and left the Society and organized medicine in better condition than we found it. Let it be said that physicians stepped up to the plate and preserved that touchstone of all that is sacred to your profession, the doctor-patient relationship—that doctors won the battle for high quality patient care—and that we helped you do that. Let it be said that we broadened our base, rose to the occasion and faced up to the challenges, working diligently to improve the lot of physicians and patients. Let it be said that we were not afraid to be bold and innovative, but that we were always circumspect in the use of our members dues. And let it be said above all else that we fought the good fight and kept faith with each other. With your past help and support, CSMS can point to many significant accomplishments for physicians, but there remains more to be done. The CSMS MSO initiative is our next important step as we stretch your state medical society to its limits—but always—always—for its doctors.

IN MEMORIAM

ALISBERG, NORMAN, New York University School of Medicine, 1944. Dr. Alisberg was associate professor of medicine at the University of Connecticut School of Medicine, and the former chief of medicine at Bristol Hospital. Prior to his move to Connecticut, he maintained a private internal medicine and allergy and immunology practice in New York and served as assistant professor in clinical medicine at New York University College of Medicine. Dr. Alisberg was a member and former president of the Hartford County Medical Association where he served as a delegate and associate counselor to the Connecticut State Medical Society, where he was active on numerous committees for over 15 years, and the American Medical Association. Dr. Alisberg died 28 July 1997 at the age of 75.

ANDERSON, CLIFTON W., Harvard Medical School, 1934. Dr. Anderson, a surgeon, practiced in Old Greenwich from 1939. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Anderson died 9 April 1997 at the age of 90.

FOOTE, FRANKLIN M., Yale University School of Medicine, 1933. Dr. Foote served as Commissioner of Health for the State of Connecticut from 1959 until 1974. Prior to his appointment as health commissioner, Dr. Foote was executive director of the National Society for the Prevention of Blindness in New York City. His career included several teaching positions at Cornell University College of Medicine, Yale University, and the University of Hartford. During his retirement, Dr. Foote served as director of health for the town of Wethersfield and served as a medical consultant to area companies including Travelers Medicare Division. In addition to numerous public health and preventative medicine associations, Dr. Foote was a member of the Hartford County Medical Association where he served as a delegate to the Connecticut State Medical Society from 1975 to 1983, the Connecticut State Medical Society where he was active on the Committee on Public Health for over 10 years as well as serving on other committees relating to public health, and the American Medical Association. Dr. Foote died 29 June 1997 at the age of 89.

FEROLETO, GEORGE J., University of Vermont College of Medicine, 1959. Dr. Feroleto was a family practitioner in Bridgeport for 35 years and was on the attending staff at St. Vincent's Medical Center. He was a member of the Fairfield County Medical Association and the Connecticut State Medical Society. Dr. Feroleto died 24 July 1997 at the age of 70.

FOX, MARVIN I., Cornell University Medical College, 1953. Dr. Fox, an internist specializing in gastroenterology practiced in Milford until his retirement in 1992. He was a member of the New Haven County Medical Association where he served as president from 1985 to 1986 and as an associate councilor and delegate to the Connecticut State Medical Society for over 10 years, the Connecticut State Medical Society where he served on the Committee on Ethical and Judicial Affairs and the Committee on Public Affairs for many years, and the American Medical Association. Dr. Fox died in Florida during 1995 at the age of 67.

HOLTZ, RAYMOND S., University of Vermont College of Medicine, 1928. Dr. Holtz practiced in Hartford for 39 years, specializing in obstetrics and gynecology. He was the Chief of Obstetrical Service for J.J. McCook Memorial Hospital of Hartford and served on the staff of Mt. Sinai Hospital, Hartford Hospital, and St. Francis Hospital. In addition to the Hartford Medical Society, Dr. Holtz was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Holtz died 16 July 1997 at the age of 93.

SALERNO, SILVIO A., Georgetown University School of Medicine, 1959. Dr. Salerno, a radiologist at Greenwich Hospital from 1967 until 1989, also had a private practice in Greenwich during that time. He was a member of the Fairfield County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Salerno died 12 May 1997 at the age of 63.

SINTON, WILLIAM A., Boston University School of Medicine, 1946. Dr. Sinton was an attending physician in the orthopaedic surgery department of Danbury Hospital from 1953 until his retirement in 1996. He was also an instructor of orthopaedic surgery at Columbia University. In 1972, Dr. Sinton cofounded *The Journal of Sports Medicine* which was sold to the American Orthopaedic Society for Sports Medicine in 1974. In addition to numerous orthopaedic and sports medicine organizations, Dr. Sinton was a member and past president of the Danbury Medical Society, the Fairfield County Medical Association where he previously served as an alternate delegate to the Connecticut State Medical Society, the Connecticut State Medical Society where he served on the Conference Committee with the Connecticut Bar Association from 1962 to 1963, and the American Medical Association. Dr. Sinton died 5 July 1997 at the age of 76.

WAUGH, ROBERT E., Yale University School of Medicine, 1959. Dr. Waugh, an anesthesiologist, joined the staff of New Britain General Hospital in 1964 and at the time of his retirement in 1991 he was the medical director of the Ambulatory Surgery Unit. In addition to county, state, and national anesthesiology societies, he was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Waugh died 1 August 1997 at the age of 64.

WOLFSON, HERMAN, University of Chicago Pritzker School of Medicine, 1953. Dr. Wolfson was a pediatrician in private practice in Newington until his retirement in 1993. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Wolfson died 20 July 1997 at the age of 76.

WOLFSON, SAMUEL, Faculty of Medicine University of Sheffield, England, 1937. Dr. Wolfson joined the staff of the Department of Anesthesiology at New Britain General Hospital in 1946. In 1950, he was appointed Senior Attending Anesthetist and he later served as Associate Chief, and Chief of Anesthesiology until his retirement in 1975. Dr. Wolfson was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Wolfson died 24 July 1997 at the age of 86.

Consumer Concern Or Complaint Form Regarding Group Or Individual Health Insurance Including Managed Care Plans

To Be Submitted To
THE CONNECTICUT DEPARTMENT OF INSURANCE
CONSUMER AFFAIRS DIVISION
P.O. BOX 816
HARTFORD, CT 06142-0816

Phone: (860) 297-3900 or 1-800-203-3447 Fax: (860) 297-3872

The Consumer Affairs Division of the Department of Insurance receives, reviews and responds to complaints and inquiries from state residents concerning insurance related problems. The staff examines each complaint to determine whether statutory requirements and contractual obligations within the commissioner's jurisdiction have been fulfilled. The Consumer Affairs Division coordinates the resources available within the Department to address consumer complaints.

In order for the Division to pursue a formal review of a concern or complaint, the consumer must submit a written explanation to the address listed above with as much pertinent detail as possible. Each written submission to the Consumer Affairs Division will be acknowledged.

Name of person filing the concern or complaint:

____

Address: ____

Phone where the Department can contact you: (_____) ____________________

This concern or complaint concerns the following Insurance Company or Managed Care Plan: ____
Policy Number: ____
Name of Policyholder: ____
Name of Enrollee: ____
Name of Patient: ____
Patient is ___ **self** ___ **dependent** ___**other** (explain)______________________

The following is a detailed description of the concern or complaint:

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Your Success is Our Goal

American Medical Association Organized Medical Staff Section (AMA-OMSS)* Assembly Meeting

December 4-8, 1997
Wyndham Anatole Hotel
Dallas, Texas

To succeed in today's health care environment, your medical staff needs the latest information and appropriate skills for meeting the day-to-day challenges of medical practice. By attending this meeting, you can learn about:

- **Joint Commission's ORYX initiative**
- **CPT coding changes and self audits**
- **Measuring and managing outcomes**
- **Group dynamics and team building**
- **Fraud and abuse compliance**
- **Advocating your issues at home**
- **New legislation and AMA action**
- **Medical staff reengineering and bylaws**
- **Forming a physician organization**
- **Patient involvement in medical decision-making**

In addition to these educational offerings, as an AMA-OMSS representative of your medical staff, you can participate in advocacy, policy-making and networking activities. **Our goal is to work with you to identify and address medicine's most pressing issues. We also want to help you increase your knowledge and skill so that together we can best serve the needs of patients, physicians, and the profession.**

To achieve this goal you can:

▼ Submit resolutions and participate in mode-of-practice and general interest forums to bring your concerns to the forefront.

▼ Testify at reference committee hearings and vote on actions in a democratic assembly to further AMA's advocacy agenda.

▼ Attend practical education programs to improve your medical practice, earn **10.5** hours of CME credit ** and pay no fee to register!

Your success depends on your involvement! Plan today to attend the 1997 Interim AMA-OMSS Assembly Meeting on December 4-8, 1997, at the Wyndham Anatole Hotel in Dallas, Texas. To receive more information and registration materials, please call **800 621-8335 and ask for the Department of Organized Medical Staff Services.**

* The American Medical Association Organized Medical Staff Section (AMA-OMSS) leads and assists grassroots physicians, individually and in groups, to organize and reclaim their role as medical leaders and advocates for excellence in patient care, professionalism, and the integrity of the patient-physician relationship. We provide practical educational forums, focused policy development, and grassroots support through the Federation.

** The AMA designates this education activity for a maximum of 10.5 hours in category 1 credit towards the AMA Physician's Recognition Award. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

American Medical Association
Physicians dedicated to the health of America

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

OPPORTUNITIES FOR PRACTICE

INTERNAL MEDICINE

Chief resident, internal medicine—Griffin Hospital, a major affiliate of Yale University School of Medicine. Excellent opportunity for academically-oriented individual, minimum requirement three years internal medicine residency, ABIM certification preferred. Title of Clinical Instructor in Medicine at Yale given. Send CV to: Dr. Vincent A. DeLuca, Jr., Chairman, Department of Medical Education & Student Affairs, The Griffin Hospital, Derby, CT 06418.

PEDIATRICIAN

BC/BE Pediatrician to replace retiring member of group in July 1998. University affiliation, suburban practice in south central Connecticut. Competitive salary and benefits. Contact Dr. L. DiMauro, 420 S. Main St., Cheshire, CT -6410, telephone (203) 272-0396.

Central Connecticut—Excellent opportunity for a BE/BC pediatrician to join four-person practice in a safe, family-oriented suburban location in Bristol, Connecticut. Busy, up-beat practice offers flexibility to match your lifestyle or family needs. Excellent compensation; partnership potential. Call us at (800) 892-3846, or fax us your CV at (860) 585-3525. No J-1 opportunities available.

North central Connecticut growing pediatric practice seeking full-time BC/BE pediatrician to share office/hospital responsibilities, on call 1:5. Growing community with community hospital. Nice residential area with excellent school system. Send CV to: P.O. Box 40, Somers, CT 06071 or fax (860) 875-1254 (call ahead).

PREVENTIVE MEDICINE

Preventive medicine residency manager in a Connecticut community hospital. Candidates must be BC/BE in both preventive medicine and internal medicine, currently engaged in clinical care, and must be committed to both community-based health promotion and disease prevention, and community-oriented primary care. The position requires demonstrated experience and capability in teaching biostatistics, epidemiology, and preventive medicine as well as internal medicine, and also requires a high level of expertise in computer analysis and in epidemiologic and health care research, and must possess, or be eligible for, a Connecticut medical license. Inquire: (203) 732-7325.

PRIMARY CARE

HealthFirst, a growing regional community health center with three sites in eastern Connecticut seeks BC/BE FP/IM to provide full range of preventive and primary care. All sites are fully staffed, computerized and integrated into an organizational network. Competitive salary and benefits. For more information call or send CV to: Recruitment Manager, 112 Lafayette St., Norwich, CT 06360, telephone (860) 885-1308, fax (860) 889-1982.

Primary care physician or orthopedist wanted for multidisciplinary pain and rehab center in New Haven. Part-time, flexible hours, no weekends or evenings. No on call. Please call (203) 795-9745 for interview or fax CV to (203) 397-0643.

Primary care physician wanted for an urgent care center in the Hartford, Connecticut area. Practice accepts Medicare and Medicaid as well as some indigent care. Please respond to: Daniel A. Raymond, Administrator, Hampden County Medical Group, Inc., 8 Woodland Dell Rd., Wilbraham, MA 01095, telephone (413) 596-9200, fax (413) 596-4890.

RADIOLOGY

Radiologist wanted, part-time, approximately three days per week, starting January 1998. Some flexibility desired. Busy outpatient office. No angiography or night call. For information please contact Kenneth Bird, M.D. at (860) 344-6293.

PHYSICIANS WISHING TO PRACTICE IN THE STATE OF CONNECTICUT

FAMILY PRACTICE

Available immediately. Licensed in Connecticut, New Jersey, Pennsylvania, and Ontario, Canada. M.D. at the University of Toronto, Canada. Internship and residency at The Toronto Hospital, University of Toronto. Passed National Boards. American Board eligible. Certified by the College of Family Physicians of Canada. Would like to join a solo, group, or associates practice. Please respond to: Noemi Farkas, M.D., 300 Gorge Road, Unit 30, Cliffside Park, NJ 07010, telephone (201) 840-9126.

GENERAL PRACTICE

Availability date flexible. Licensed in Florida, Connecticut, Oklahoma and Kentucky. M.D. at Autonomous University of Guadalajara, Mexico. Internship at Fredericton Hospital, Canada. Residency at Texas Tech. Would like to join a group, associates, institutional or industrial practice. Please respond to: Ira H. Liss, M.D., 7407 State Road 52, Hudson, FL 34667, telephone (813) 863-4753.

INTERNAL MEDICINE

Available immediately. Licensed in Connecticut. Passed National Boards. A/B certified. M.D. at Tufts University School of Medicine. Internship and residency at the Hospital of St. Raphael. Office based general internist with extensive managed care experience, seeking to join a group or associates practice. Please respond to: Michael F. Collins, M.D., 53 Cotswold Close, Glastonbury, CT 06033. Telephone (860) 633-5698.

Available immediately—Connecticut licensed physician with 20 years experience. Board certified in internal medicine and geriatrics. Seeking full-time internist/primary care physician position in the Greater Hartford area or surrounding areas within commute distance. Please respond to CSMS c/o IM/AD.

Available July 1998. Passed National Boards. American Board eligible in 1998. M.D. at Nishter Medical College, Pakistan. Internship at King Khalid University, Saudi Arabia. Residency at Sisters of Charity Hospital, Buffalo, New York. Would like to join a group, associates or institutional practice. Please respond to: Amjad Riaz Ul Haq, 1 Slate Creek Dr., Apt. 3, Cheektowaga, NY 14227, telephone (716) 668-8528.

MEDICAL DIRECTOR

Available 1 October 1997. Certified in family practice, and quality assurance and utilization review. American trained with good communicative skills. Family physician with practice experience plus 15 years in managed care, indemnity, HMO, PPO and POS plus credentialing. Extensive review experience that includes managed disability and some policy writing. Distinguished Fellow of the American College of Medical Quality. Active at both state and county medical society levels and specialty organizations. Recently completed Masters in Medical Management. Prefers Connecticut location, CV available. Please call (860) 636-8781 daytime, or (860) 632-5757 evenings.

PART-TIME

Available immediately. Licensed in Connecticut. Board certified in internal medicine, hematology and oncology. M.D. at the University of Vermont. Internal medicine residency at West Virginia University. Hematology/oncology fellowship at the University of Minnesota. Seeking a part-time position in a solo or group practice within commuting distance of Hartford. Please respond to: Susan F. Burroughs, M.D., 7 Butternut Lane, Simsbury, CT 06089, telephone (860) 651-3941.

Griffin Hospital Department of Internal Medicine, Office of Continuing Medical Education

presents

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Tuesday, 4 November 1997

Griffin Hospital
130 Division Street, Derby, Connecticut

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Accreditation: Griffin Hospital Office of Continuing Medical Education is accredited by the Accreditation Council for Continuing Medical Education for Physicians and designates this education activity for 5 hours in Category 1 credit towards the AMA Physician's Recognition Award.

For further information contact: Ramin Ahmadi, M.D., M.P.H., Office of Continuing Education, Griffin Hospital, 130 Division Street, Derby, CT 06418 • (203) 732-7374 fax (203) 732-7185

PAID CLASSIFIED ADVERTISING

All PAID classified advertising orders, correspondence, and payments should be directed to: CONNECTICUT MEDICINE, Classified Department, 160 St. Ronan Street, New Haven, CT 06511, Tel. (203) 865-0587. The Classified rates are as follows: $60.00 for 25 words or less; plus $1.00 each additional word. For confidential answers, the cost is $3.00 per insertion, sent in care of CONNECTICUT MEDICINE. Ad copy must be typewritten, double spaced, with payment, and delivered no later than the first day of the month preceding the month of issue.

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If interested, please send your resume to: Mason & Kichar Confidential Reply Service, P.O. Box 115, Dept. 580/PHYS, Bethany, CT 06524. EOE M/F/D/V.

TAX-FREE INCOME

Connecticut taxpayers will pay the highest per-capita federal tax bill this year says a report by The Tax Foundation in Washington. If you could use tax-free income call me and I will fax you my current selection of triple-tax free investment grade municipal bonds. Ted Willis Northeast Securities, [Clearing agent: Bear-Stearns Securities Corp.] 1-800-572-6256.

29 April 1998 thru 2 May 1998

International Conference on Physician Health

sponsored by the

American Medical Association

and the

Canadian Medical Association

Victoria, British Columbia, Canada

Abstract and registration information contact:
E. Tejcek, Project manager
(312) 464-5073 (tel)
elaine_tejcek@ama-assn.org (e-mail)
(312) 464-5841 (fax)

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and
The Connecticut State Medical Society
invite you to spend

A Morning in Medical School for Connecticut Legislators

at the
Yale University School of Medicine
New Haven, Connecticut

Thursday, 6 November 1997

8:30 to 9:30 A.M.—Medical Grand Rounds (optional)
Invited Lecturer, Marcia Angell, M.D.
Deputy Editor, *The New England Journal of Medicine*
Speaking on Expert Medical Testimony in the Courtroom

9:30 to 10:00 A.M.—Coffee and Pastry

10:00 A.M. to Noon—Welcoming and Presentation
"The Medical Education Curriculum"
Tour of the Yale School of Medicine

Luncheon Reception
Please RSVP to Pattie or Mag at CSMS at (203) 865-0587
(Detailed directions and parking arrangements will be provided)
Seating at Medical Grand Rounds will be limited.

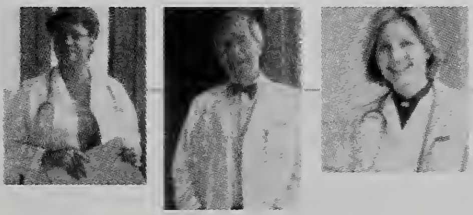
"A damaged heart has changed her life. She shouldn't have to change her doctor, too."

I firmly believe that there must always be some way for patients to see their own doctors. Far too many health care companies still think otherwise.

That's why I'm a member of the American Medical Association. The AMA is dedicated to protecting and expanding the rights of patients to choose their own physicians. In fact, the AMA has recently developed a health care proposal that will do just that.

To learn more about the AMA proposal and to find out how you can help us achieve our goals, please call 1-888-AMA-1997.

We need you with us in this fight.



TODAY'S AMA

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Visit our website at www.ama-assn.org

BRIEF SUMMARY

ZYBAN™ (bupropion hydrochloride)

Sustained-Release Tablets

The following is a brief summary only; see full prescribing information for complete product information.

CONTRAINDICATIONS: ZYBAN is contraindicated in patients with a seizure disorder.

ZYBAN is contraindicated in patients treated with WELLBUTRIN® (bupropion hydrochloride) Tablets, WELLBUTRIN SR® (bupropion hydrochloride) Sustained-Release Tablets, or any other medications that contain bupropion because the incidence of seizure is dose dependent.

ZYBAN is contraindicated in patients with a current or prior diagnosis of bulimia or anorexia nervosa because of a higher incidence of seizures noted in patients treated for bulimia with the immediate-release formulation of bupropion.

The concurrent administration of ZYBAN and a monoamine oxidase (MAO) inhibitor is contraindicated. At least 14 days should elapse between discontinuation of an MAO inhibitor and initiation of treatment with ZYBAN.

ZYBAN is contraindicated in patients who have shown an allergic response to bupropion or the other ingredients that make up ZYBAN.

WARNINGS: Patients should be made aware that ZYBAN contains the same active ingredient found in WELLBUTRIN and WELLBUTRIN SR used to treat depression, and that ZYBAN should not be used in combination with WELLBUTRIN, WELLBUTRIN SR, or any other medications that contain bupropion.

Because the use of bupropion is associated with a dose-dependent risk of seizures, *clinicians should not prescribe doses over 300 mg/day for smoking cessation.* The risk of seizures is also related to patient factors, clinical situation, and concurrent medications, which must be considered in selection of patients for therapy with ZYBAN.

- **Dose: *For smoking cessation, doses above 300 mg/day should not be used.* The seizure rate associated with doses of sustained-release bupropion up to 300 mg/day is approximately 0.1% (1/1,000). This incidence was prospectively determined during an 8-week treatment exposure in approximately 3,100 depressed patients. Data for the immediate-release formulation of bupropion revealed a seizure incidence of approximately 0.4% (4/1,000) in depressed patients treated at doses in a range of 300 to 450 mg/day. In addition, the estimated seizure incidence increases almost tenfold between 450 and 600 mg/day.**
- **Patient factors: Predisposing factors that may increase the risk of seizure with bupropion use include history of head trauma or prior seizure, central nervous system (CNS) tumor, and concomitant medications that lower seizure threshold.**
- **Clinical situations: Circumstances associated with an increased seizure risk include, among others, excessive use of alcohol; abrupt withdrawal from alcohol or other sedatives; addiction to opiates, cocaine, or stimulants; use of over-the-counter stimulants and anorectics; and diabetes treated with oral hypoglycemics or insulin.**
- **Concomitant medications: Many medications (e.g., antipsychotics, antidepressants, theophylline, systemic steroids) and treatment regimens (e.g., abrupt discontinuation of benzodiazepines) are known to lower seizure threshold.**

Recommendations for Reducing the Risk of Seizure: Retrospective analysis of clinical experience gained during the development of bupropion suggests that the risk of seizure may be minimized if

- **the total daily dose of ZYBAN does *not* exceed 300 mg (the maximum recommended dose for smoking cessation), and**
- **the recommended daily dose for most patients (300 mg/day) is administered in divided doses (150 mg twice daily).**
- **No single dose should exceed 150 mg to avoid high peak concentrations of bupropion and/or its metabolites.**
- **ZYBAN should be administered with extreme caution to patients with a history of seizure, cranial trauma, or other predisposition(s) toward seizure, or patients treated with other agents (e.g., antipsychotics, antidepressants, theophylline, systemic steroids, etc.) or treatment regimens (e.g., abrupt discontinuation of a benzodiazepine) that lower seizure threshold.**

Potential for Hepatotoxicity: In rats receiving large doses of bupropion chronically, there was an increase in incidence of hepatic hyperplastic nodules and hepatocellular hypertrophy. In dogs receiving large doses of bupropion chronically, various histologic changes were seen in the liver, and laboratory tests suggesting mild hepatocellular injury were noted.

PRECAUTIONS:

General: ***Allergic Reactions:*** Anaphylactoid reactions characterized by symptoms such as pruritus, urticaria, angioedema, and dyspnea requiring medical treatment have been reported at a rate of about 1-3 per thousand in clinical trials of ZYBAN. In addition, there have been rare spontaneous postmarketing reports of erythema multiforme, Stevens-Johnson syndrome, and anaphylactic shock associated with bupropion.

Insomnia: In the dose-response smoking cessation trial, 29% of patients treated with 150 mg/day of ZYBAN and 35% of patients treated with 300 mg/day of ZYBAN experienced insomnia, compared to 21% of placebo-treated patients. Symptoms were sufficiently severe to require discontinuation of treatment in 0.6% of patients treated with ZYBAN and none of the patients treated with placebo.

In the comparative trial, 40% of the patients treated with 300 mg/day of ZYBAN, 28% of the patients treated with 21 mg/day of HABITROL® (nicotine transdermal system) (NTS), and 45% of the patients treated with the combination of ZYBAN and NTS experienced insomnia compared to 18% of placebo-treated patients. Symptoms were sufficiently severe to require discontinuation of treatment in 0.8% of patients treated with ZYBAN and none of the patients in the other three treatment groups.

Insomnia may be minimized by avoiding bedtime doses and, if necessary, reduction in dose.

Psychosis, Confusion, and Other Neuropsychiatric Phenomena: In clinical trials with ZYBAN conducted in nondepressed smokers, the incidence of neuropsychiatric side effects was generally comparable to placebo. Depressed patients treated with bupropion in depression trials have been reported to show a variety of neuropsychiatric signs and symptoms including delusions, hallucinations, psychosis, concentration disturbance, paranoia, and confusion. In some cases, these symptoms abated upon dose reduction and/or withdrawal of treatment.

Activation of Psychosis and/or Mania: Antidepressants can precipitate manic episodes in bipolar disorder patients during the depressed phase of their illness and may activate latent psychosis in other susceptible individuals. The sustained-release formulation of bupropion is expected to pose similar risks. There were no reports of activation of psychosis or mania in clinical trials with ZYBAN™ conducted in nondepressed smokers.

Use in Patients With Systemic Illness: There is no clinical experience establishing the safety of ZYBAN in patients with a recent history of myocardial infarction or unstable heart disease. Therefore, care should be exercised if it is used in these groups. Bupropion was well tolerated in depressed patients who had previously developed orthostatic hypotension while receiving tricyclic antidepressants, and was generally well tolerated in a group of 36 depressed inpatients with stable congestive heart failure (CHF). However, bupropion was associated with a rise in supine blood pressure in the study of patients with CHF, resulting in discontinuation of treatment in two patients for exacerbation of baseline hypertension.

In the comparative trial, 6.1% of patients treated with the combination of ZYBAN and NTS had treatment-emergent hypertension compared to 2.5%, 1.6%, and 3.1% of patients treated with ZYBAN, NTS, and placebo, respectively. The majority of these patients had evidence of preexisting hypertension. Three patients (1.2%) treated with the combination of ZYBAN and NTS and one patient (0.4%) treated with NTS had study medication discontinued due to hypertension compared to none of the patients treated with ZYBAN or placebo. Monitoring for treatment-emergent hypertension is recommended in patients receiving the combination of ZYBAN and NTS.

Because bupropion hydrochloride and its metabolites are almost completely excreted through the kidney and metabolites are likely to undergo conjugation in the liver prior to urinary excretion, treatment of patients with renal or hepatic impairment should be initiated at reduced dosage as bupropion and its metabolites may accumulate in such patients to a greater extent than usual. The patient should be closely monitored for possible toxic effects of elevated blood and tissue levels of drug and metabolites.

Information for Patients: See PATIENT INFORMATION at the end of the full prescribing information for the text of the separate leaflet provided for patients. Physicians are advised to review the leaflet with their patients and to emphasize that ZYBAN contains the same active ingredient found in WELLBUTRIN and WELLBUTRIN SR used to treat depression and that ZYBAN should not be used in conjunction with WELLBUTRIN, WELLBUTRIN SR, or any other medications that contain bupropion hydrochloride.

Laboratory Tests: There are no specific laboratory tests recommended.

Drug Interactions: In vitro studies indicate that bupropion is primarily metabolized to hydroxybupropion by the CYP2B6 isoenzyme. Therefore, the potential exists for a drug interaction between ZYBAN and drugs that affect the CYP2B6 isoenzyme metabolism (e.g., orphenadrine and cyclophosphamide). The threohydrobupropion metabolite of bupropion does not appear to be produced by the cytochrome P450 isoenzymes. No systemic data have been collected on the metabolism of ZYBAN following concomitant administration with other drugs or, alternatively, the effect of concomitant administration of ZYBAN on the metabolism of other drugs.

Animal data indicated that bupropion may be an inducer of drug-metabolizing enzymes in humans. However, following chronic administration of bupropion, 100 mg t.i.d. to 8 healthy male volunteers for 14 days, there was no evidence of induction of its own metabolism. Because bupropion is extensively metabolized, the coadministration of other drugs may affect its clinical activity. In particular, certain drugs may induce the metabolism of bupropion (e.g., carbamazepine, phenobarbital, phenytoin), while other drugs may inhibit the metabolism of bupropion (e.g., cimetidine).

Studies in animals demonstrate that the acute toxicity of bupropion is enhanced by the MAO inhibitor phenelzine (see CONTRAINDICATIONS).

Limited clinical data suggest a higher incidence of adverse experiences in patients receiving concurrent administration of bupropion and levodopa. Administration of ZYBAN to patients receiving levodopa concurrently should be undertaken with caution, using small initial doses and gradual dose increases.

Concurrent administration of ZYBAN and agents (e.g., antipsychotics, antidepressants, theophylline, systemic steroids, etc.) or treatment regimens (e.g., abrupt discontinuation of benzodiazepines) that lower seizure threshold should be undertaken only with extreme caution (see WARNINGS).

Physiological changes resulting from smoking cessation itself, with or without treatment with ZYBAN, may alter the pharmacokinetics of some concomitant medications, which may require dosage adjustment.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Lifetime carcinogenicity studies were performed in rats and mice at doses up to 300 and 150 mg/kg per day, respectively. These doses are approximately ten and two times the maximum recommended human dose (MRHD), respectively, on a mg/m^2 basis. In the rat study, there was an increase in nodular proliferative lesions of the liver at doses of 100 to 300 mg/kg per day (approximately three to ten times the MRHD on a mg/m^2 basis); lower doses were not tested. The question of whether or not such lesions may be precursors of neoplasms of the liver is currently unresolved. Similar liver lesions were not seen in the mouse study, and no increase in malignant tumors of the liver and other organs was seen in either study.

Bupropion produced a positive response (two to three times control mutation rate) in two of five strains in the Ames bacterial mutagenicity test and an increase in chromosomal aberrations in one of three in vivo rat bone marrow cytogenic studies.

A fertility study in rats at doses up to 300 mg/kg revealed no evidence of impaired fertility.

Pregnancy: ***Teratogenic Effects: Pregnancy Category B:*** Teratology studies have been performed at doses up to 450 mg/kg in rats (approximately 14 times the MRHD on a mg/m^2 basis), and at doses up to 150 mg/kg in rabbits (approximately 10 times the MRHD on a mg/m^2 basis). There is no evidence of impaired fertility or harm to the fetus due to bupropion. There are no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed. Pregnant smokers should be encouraged to attempt cessation using educational and behavioral interventions before pharmacological approaches are used.

Labor and Delivery: The effect of ZYBAN™ on labor and delivery in humans is unknown.

Nursing Mothers: Bupropion and its metabolites are secreted in human milk. Because of the potential for serious adverse reactions in nursing infants from ZYBAN, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Clinical trials with ZYBAN did not include individuals under the age of 18. Therefore, the safety and efficacy in a pediatric smoking population have not been established. The immediate-release formulation of bupropion was studied in 104 pediatric patients (age range, 6 to 16) in clinical trials of the drug for other indications. Although generally well tolerated, the limited exposure is insufficient to assess the safety of bupropion in pediatric patients.

Use in the Elderly: In general, older patients are known to metabolize drugs more slowly and to be more sensitive to the side effects of drugs. A single-dose pharmacokinetic study demonstrated that the disposition of bupropion and its metabolites in elderly subjects was similar to that of younger subjects (see CLINICAL PHARMACOLOGY section of full prescribing information). Of the approximately 5,600 patients who participated in clinical trials with bupropion sustained-release tablets (depression and smoking cessation studies), 303 were 60 to 69 years old and 88 were 70 years of age or older. The experience with patients 60 years of age or older was similar to that in younger patients.

ADVERSE REACTIONS: (see also WARNINGS and PRECAUTIONS)

The information included under ADVERSE REACTIONS is based primarily on data from the dose-response trial and the comparative trial that evaluated ZYBAN for smoking cessation (see CLINICAL TRIALS section of full prescribing information). Information on additional adverse events associated with the sustained-release formulation of bupropion in depression trials, as well as the immediate-release formulation of bupropion, is included in a separate section (see Other Events Observed During the Clinical Development and Postmarketing Experience of Bupropion).

Adverse Events Associated With the Discontinuation of Treatment: Adverse events were sufficiently troublesome to cause discontinuation of treatment in 8% of the 706 patients treated with ZYBAN and 5% of the 313 patients treated with placebo. The more common events leading to discontinuation of treatment with ZYBAN included nervous system disturbances (3.4%), primarily tremors, and skin disorders (2.4%), primarily rashes.

Incidence of Commonly Observed Adverse Events: The most commonly observed adverse events consistently associated with the use of ZYBAN were dry mouth and insomnia. The most commonly observed adverse events were defined as those that consistently occurred at a rate of five percentage points greater than that for placebo across clinical studies.

Dose Dependency of Adverse Events: The incidence of dry mouth and insomnia may be related to the dose of ZYBAN. The occurrence of these adverse events may be minimized by reducing the dose of ZYBAN. In addition, insomnia may be minimized by avoiding bedtime doses.

Adverse Events Occurring at an Incidence of 1% or More Among Patients Treated With ZYBAN: Table 1 enumerates selected treatment-emergent adverse events from the dose-response trial that occurred at an incidence of 1% or more and were more common in patients treated with ZYBAN compared to those treated with placebo. Table 2 enumerates selected treatment-emergent adverse events from the comparative trial that occurred at an incidence of 1% or more and were more common in patients treated with ZYBAN, NTS, or the combination of ZYBAN and NTS compared to those treated with placebo. Reported adverse events were classified using a COSTART-based dictionary.

Table 1

Treatment-Emergent Adverse Event Incidence in the Dose-Response Trial*

Body System/ Adverse Experience	ZYBAN™ 100 to 300 mg/day (n = 461) %	Placebo (n = 150) %
Body (General)		
Neck pain	2	<1
Allergic reaction	1	0
Cardiovascular		
Hot flashes	1	0
Hypertension	1	<1
Digestive		
Dry mouth	11	5
Increased appetite	2	<1
Anorexia	1	<1
Musculoskeletal		
Arthralgia	4	3
Myalgia	2	1
Nervous system		
Insomnia	31	21
Dizziness	8	7
Tremor	2	1
Somnolence	2	1
Thinking abnormality	1	0
Respiratory		
Bronchitis	2	0
Skin		
Pruritus	3	<1
Rash	3	<1
Dry skin	2	0
Urticaria	1	0
Special Senses		
Taste perversion	2	<1

*Selected adverse events with an incidence of at least 1% of patients treated with ZYBAN and more frequent than in the placebo group.

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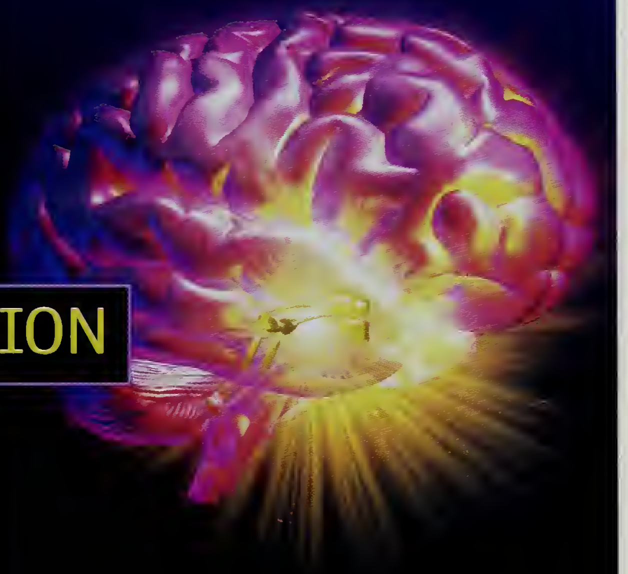

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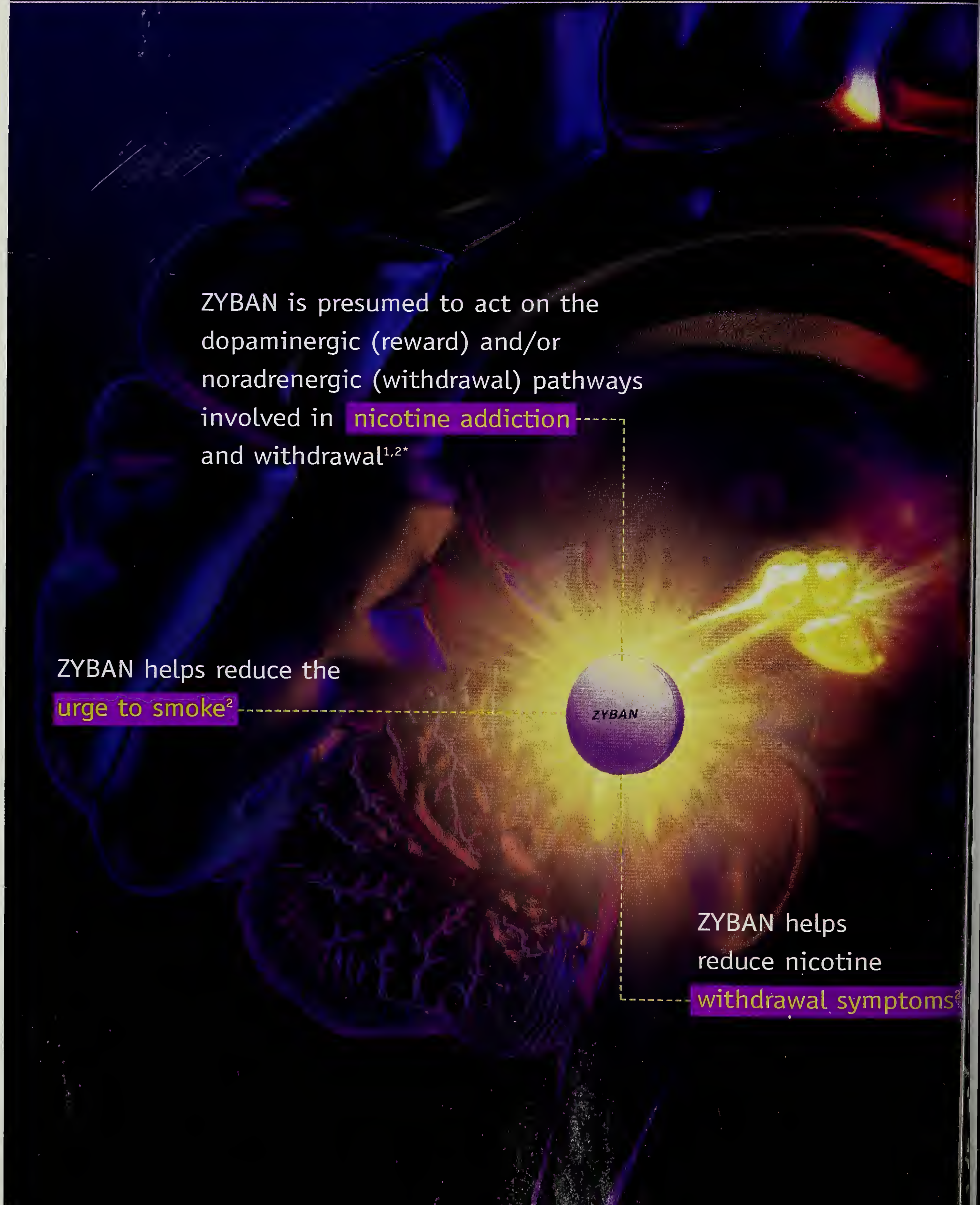

ZYBAN is presumed to act on the dopaminergic (reward) and/or noradrenergic (withdrawal) pathways involved in nicotine addiction and withdrawal[1,2*]

ZYBAN helps reduce the urge to smoke[2]

ZYBAN helps reduce nicotine withdrawal symptoms[2]

Connecticut Medicine

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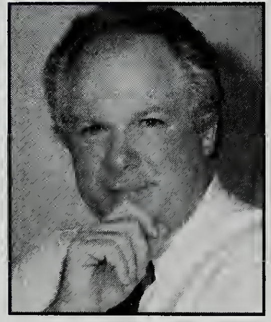

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Coenzyme Q_{10}: A Vital Therapeutic Nutrient for the Heart with Special Application in Congestive Heart Failure

STEPHEN T. SINATRA, M.D.

ABSTRACT—Vitamin coenzyme Q_{10} is a critical adjuvant complementary therapy for patients with congestive heart failure, especially when traditional medical therapy is unsuccessful. The following case studies, with systolic and/or diastolic dysfunction, demonstrate the effectiveness of coenzyme Q_{10} in improving quality of life, as well as survival.

Introduction

COENZYME Q_{10} (CoQ_{10}) or "Ubiquinone," so named for its ubiquitous nature, is a fat-soluble compound that functions as an antioxidant and coenzyme in the energy-producing metabolic pathways. The chemistry, therapeutics, and clinical applications of this compound have appeared in mainstream textbook cardiology.[1] (Table 1). As an antioxidant, the reduced form of CoQ_{10} inhibits lipid peroxidation in both cell membranes and serum low-density lipoproteins, and also protects proteins and DNA from oxidative damage.[2,3] CoQ_{10} also has membrane stabilizing activity as well as recently discovered platelet effects.[4] The bioenergetic activity of this compound, however, is probably its most important function.

Bioenergetics is the study of energy transformations in living organisms, used in the field of biochemistry, to reference cellular energy. Every cell must have a way of obtaining energy. Such oxygen-based production of energy occurs in the mitochondria, where CoQ_{10} acts as an essential component of the electron transport among reduced nicotinamide adenine dinucleotide (NADH), succinate dehydrogenases, and the cytochrome system.[1,2] In the subsequent series of redox reactions involving oxidative phosphorylation pathways, adenosine triphosphate (ATP) is synthesized. Since all cellular function depends on an adequate supply of ATP, CoQ_{10} is an essential component of life itself.

The biosynthesis of CoQ_{10} is a complex process requiring at least seven vitamins and multiple trace elements. CoQ_{10} is found in relatively high concentrations in the heart, liver, and kidney, and in lower concentrations in the brain and colon.

Although CoQ_{10} can be synthesized in the body, situations may occur in which the body's capacity to produce CoQ_{10} is insufficient to meet its requirements. Therefore, some patients may be deficient in this vitamin. For example, in patients receiving total parenteral nutrition, plasma levels of CoQ_{10} may undergo a 50% reduction in just one week.[5] Significantly decreased plasma levels of CoQ_{10} have been noted in a wide variety of diseases involving metabolically active cells, such as those found in the heart,[6] as well as in an overactive thyroid gland.[7]

CoQ_{10} levels in organs may also decrease with advancing age.[1] Thus, CoQ_{10} deficiency may be caused by an insufficient dietary intake of CoQ_{10}, impairment in CoQ_{10} synthesis, an excessive utilization by tissues, or a combination of any of these factors.

Although CoQ_{10} has been shown to be clinically effective in the treatment of coronary artery disease,[8] toxic cardiomyopathy, and hypertension,[9] for the past two decades many clinical studies on CoQ_{10} have focused on congestive heart failure (CHF) and cardiomyopathy. A strong correlation between low blood and tissue levels of CoQ_{10} and the severity of heart failure has been repeatedly confirmed.[6] Functional CoQ_{10} deficiencies were also reported in hypertrophied ventricles resulting from increasing aortic valve pressure gradients due to aortic stenosis.[10]

STEPHEN T. SINATRA, M.D., F.A.C.C., director of medical education, Manchester Hospital, Manchester; assistant clinical professor of medicine, University of Connecticut School of Medicine. Dr. Sinatra is also a part owner of a local health food store.

Table 1.—History and Time Line for Coenzyme Q$_{10}$

1957	CoQ$_{10}$ first isolated from beef heart by Frederick Crane.
1958	Karl Folkers at Merck Phamaceuticals determines the precise chemical formula.
Mid 1960s	Professor Yamamura of Japan is first to use coenzyme Q$_7$ (related compound) in CHF.
1972	Dr. Littarru (Italy) and Dr. Folkers (USA) document a Q$_{10}$ deficiency in human heart disease.
Mid 1970s	Japanese perfected industrial technology of fermentation to produce pure coenzyme Q$_{10}$ in significant quantities.
1976	CoQ$_{10}$ is placed on formulary in Japanese Hospitals.
1978	Peter Mitchell receives Nobel Prize for CoQ$_{10}$ and energy transfer.
1980s	Enthusiasm for CoQ$_{10}$ leads to marked increase in number and size of clinical studies around the world.
1985	Dr. Per Langsjoen in Texas reported in double blind studies the profound effectiveness Q$_{10}$ has in cardiomyopathy.
1990s	Explosion of use of coenzyme Q$_{10}$ in health food industry.
1992	Q$_{10}$ placed on formulary at Manchester Memorial Hospital, Manchester, Connecticut.
1996	Ninth International Conference on coenzyme Q$_{10}$ in Ancona, Italy—Scientists and physicians report on a variety of medical conditions improved by Q$_{10}$ administration. Blood levels of at least 2.5 μg/mL and preferably higher required for most medicinal purposes.
1996-97	Gel-Tec, a division of Tischon Laboratories, under the leadership of Raj Chopra, develops the "Bio Solv process," allowing for greater bioavailability of supplemental Q$_{10}$ in the body.
1997	CoQ$_{10}$ appears in textbooks of mainstream cardiology.

Experimental and clinical data provide extensive evidence that CoQ$_{10}$ supplementation in patients with cardiomyopathy and CHF has demonstrated improvements in left ventricular function, ejection fraction, exercise tolerance, diastolic dysfunction, clinical outcome, and quality of life.[11-13] Pretreatment with CoQ$_{10}$ in placebo-controlled trials has been also shown to be effective in preventing left ventricular depression following coronary artery bypass and valvular surgery.[14]

The following case studies will demonstrate how the supplementation of CoQ$_{10}$ was effective in reversing CHF in three critically ill patients who would probably not have survived without the addition of this vital compound. The purpose of this communication is to review CoQ$_{10}$'s clinical efficacy in the treatment of cardiovascular disease with particular emphasis on CoQ$_{10}$'s critical role as adjuvant therapy for patients with CHF.

Case Presentations

Case 1.—A 79-year-old female (LG) with a longstanding history of hypertension, LG had been diagnosed with CHF in 1977 at age 60. In 1984 she had experienced her first episode of pulmonary edema, which had been treated with a combination of angiotensin converting enzyme (ACE) inhibition, digoxin, and diuretics. Her ejection fraction (EF) at that time was 35%.

Following a second episode of flash pulmonary edema in 1992, the patient underwent cardiac catheterization that demonstrated a dilated cardiomyopathy and normal coronary arteries.

By October 1994, LG weighed 77 pounds and was suffering from severe end-stage cardiac cachexia (New York Heart Association [NYHA] Class IV). Her ejection fraction at that time had fallen to 10% to 15%, barely enough to support her bed-to-chair existence. CoQ$_{10}$ therapy was initiated at 30 mg three times a day in addition to her conventional therapy.

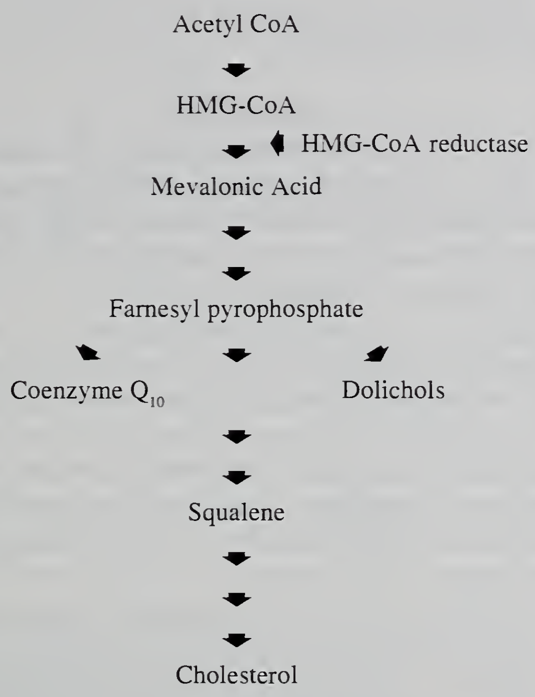
In March 1995, LG was inadvertently started on 300 mg of CoQ$_{10}$ daily. Without realizing it her son had purchased 100 mg instead of her usual 30 mg capsules, more than tripling her dose. Approximately four weeks later, LG experienced a steady and marked improvement in her functional status.

In June 1995, a repeat echocardiogram demonstrated an improvement in her ejection fraction (20%), as well as reduction in both mitral and tricuspid regurgitation which had been previously noted on color-flow and Doppler echocardiographic studies.

By October 1995, LG was shopping and visiting relatives. In January 1996 she fractured her hip, necessitating major surgery for a total hip replacement. She tolerated the surgery well despite her previously compromised cardiac status. She now continues to function at an NYHA Class II status. In addition to her conventional medical therapy, she has been successfully maintained on 300 mg of CoQ$_{10}$ daily.

Case 2.—A second case of refractory CHF on traditional therapy involved a retired male (HD) with a previous history of emphysema, hypertension, anteroseptal myocardial infarction (1982), and surgical repair of an

Figure.—Biosynthetic Pathway of Cholesterol



The enzyme 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase is necessary for the conversion of HMG-CoA to mevalonic acid, an early step in biosynthesis of cholesterol. Because mevalonic acid is also a precursor of coenzyme Q_{10} via a branch of the cholesterol biosynthetic pathway, HMG-CoA reductase inhibitors could reduce serum concentrations of coenzyme Q_{10}.

abdominal aortic aneurysm (1987). He presented with a history of congestive cardiomyopathy over the past few years. He had been hospitalized several times for evaluation of episodes of pulmonary edema complicated by ventricular tachycardia.

In December 1994, he complained of chest discomfort at rest, shortness of breath with minimal activity, and dizziness despite treatment with captopril, nitroglycerin paste, furosemide, and ipratropium bromide inhaler.

He was started on a multivitamin/mineral preparation and CoQ_{10} 30 mg three times daily. HD refused angiography. In September 1995, he was admitted for severe CHF. During an episode of flash pulmonary edema, HD required intubation and intravenous drug support with dopamine and high-dose diuretics. Although he was gradually weaned off the ventilator and continued to show slow improvement, HD's functional status remained at Class III-VI status. Echocardiogram showed an EF of 15%. At discharge, CoQ_{10} therapy was increased to 120 mg daily.

Subsequent postdischarge persantine cardiolite stress testing demonstrated old infarction of inferior, anterior, apical, and septal walls with a dilated left ventricle and EF (SPECT) gated wall motion study, estimated at 20%. In late October 1995, his CoQ_{10} dose was increased to 300 mg daily in combination with his usual captopril 50 mg three times daily and furosemide 80 mg twice daily. In December 1995, the patient's quality of life significantly improved. Furosemide was reduced to 40 mg twice daily. Echocardiogram revealed an improved ejection fraction of 25%. HD's quality of life continued to improve, resulting in a residential move to Florida to enjoy the climate. On 300 mg of CoQ_{10} daily, he was functioning at NYHA Class I-II level and was walking long distances on the beach.

Case 3.—A third case of pneumonia and severe CHF involved LH, a 79-year-old female with no known previous medical history. She was admitted to a community hospital with bilateral pneumonia and CHF.

LH required intubation because of pulmonary failure. Her condition continued to deteriorate over the next several days requiring positive end-expiratory pressure and high FIO_2 saturation. She was treated with an ACE inhibitor, verapamil, and diuretics. A tracheostomy was performed, but she continued to deteriorate despite conventional medical therapy. The family was notified of her seemingly terminal situation. Her son, a Ph.D. biochemist from California and an expert in CoQ_{10}, asked her doctors to add CoQ_{10} to his mother's treatment. The physicians refused, since it was not in the formulary, and therefore could not be administered. Desperate to find a hospital that would administer CoQ_{10}, her son called me for consultation. LH was then transferred to Manchester Memorial Hospital for conventional as well as CoQ_{10} therapy. On admission, she was on full ventilatory support in a semicomatose state and responded only to commands and painful stimuli.

Initial echocardiographic analysis demonstrated low normal systolic function with an estimated ejection fraction of 50%. Isolated diastolic dysfunction and hypertrophic cardiomyopathy with a subaortic gradient of approximately 30 mmHg were noted. Her pulmonary care was similar to that received at the previous hospital. In addition, LH received 450 mg of CoQ_{10} via nasogastric tube on a daily basis. After 10 days, LH was weaned from the ventilator. Four days later she was discharged to an extended care facility on supplemental oxygen.

She is functioning at a NYHA Class I to II status and is enjoying a good quality of life on ACE inhibitors and 300 mg of CoQ_{10} per day.

Discussion

The efficacy of CoQ_{10} in CHF has been reported in the medical literature. In a study of 126 patients followed for five years on a treatment dosage of 100 mg of CoQ_{10} daily with measured mean blood levels of approximately 2 µg/mL, mean ejection fraction was 41% at the beginning of the trial and rose to a mean of 59% after six months.[13] After careful scrutiny of individual subjects, it was reported that 71% of the patients achieved a significant improvement in ejection fraction after three months of therapy and 16% in six months. There was an overall improvement in ejection fraction in 87% of the patients. Remarkably, 106 patients had an improvement of one to two NYHA Classes. Only 13% showed no improvement. The study also clearly demonstrated that CoQ_{10} is effective and safe for the treatment of patients with dilated cardiomyopathy for over a period of six years.

In another double-blind placebo-controlled study with a crossover design involving 80 patients, improvements noted with CoQ_{10} as adjunctive therapy were even more significant in terms of exercise capacity and quality of life than those obtained from conventional drug therapy alone.[11]

In a study of cardiac transplantation candidates and CoQ_{10} administration, results indicated that correcting myocardial deficiencies of CoQ_{10} improved myocardial performance.[15] Of 11 transplant candidates, seven patients in Class III-IV improved to Class I-II functional status. In this small, but significant, study CoQ_{10} not only improved quality of life and permitted a longer waiting time for a donor heart, its efficacy and safety justified using the vitamin for patients awaiting cardiac transplantation. In another double-blind controlled trial of 641 patients receiving placebo or CoQ_{10} in a dose of 2 mg per kilogram for one year, there was a 50% reduction in pulmonary edema and a 20% reduction in hospitalization for the CoQ_{10} group *vs* placebo.[12] Perhaps the largest study to date showing the efficacy and safety of CoQ_{10} in the treatment of CHF is the Italian multicenter trial by Baggio et al, involving 2,664 patients with heart failure.[16] Other studies have also shown the positive effect CoQ_{10} has on diastolic dysfunction.

Diastolic dysfunction is an early sign of myocardial failure despite the presence of normal systolic function. Since diastolic function requires a larger amount of cellular energy than systolic contraction, more energy is required to fill the heart than to empty it. Such an additional requirement of energy activity makes CoQ_{10} such a reasonable intervention.

As demonstrated in a study of 109 patients with hypertensive heart disease and with isolated diastolic dysfunction, CoQ10 replacement resulted in clinical improvement, lowering of elevated blood pressure, improved diastolic function, and a decrease in myocardial thickness in 53% of the hypertensives.[17] In another study of seven patients with hypertropic cardiomyopathy, six nonobstructive and one obstructive, all patients noted improvement in symptoms of fatigue and dyspnea on an average of 200 mg of CoQ_{10} per day. The mean intraventricular septal thickness and the mean posterior wall thickness both improved significantly. Mitral valve inflow slope by pulsed wave Doppler (E to F slope) showed a nonsignificant trend towards improvement.[18]

Conclusion

Left ventricular function depends on the operational capacity of myocardial cells to generate the energy to expand and contract. Insufficient myocardial contractive forces often contribute significantly to CHF. Literally, heart failure is an "energy-starved heart."

Although there may be several causes of myocardial dysfunction, energy deficiency of cardiac myocytes may play a significant role and probably is the major role in pump failure. It is no longer enough to focus on the fluid retention in pump failure. We need to consider the biochemistry of "pulsation" as well. It is critically important to treat both the molecular and cellular components of the heart when managing CHF.

Therefore, cardiologists must think "bioenergetically." CoQ_{10} has a significant effect upon electron transfer in the respiratory chain and supports intramyocardial energy at the cellular level. Because oxygen-based production of energy takes place in cellular mitochondria, it is not unusual for CoQ_{10} concentrations in myocardial cells to be tenfold greater than those in the brain or colon.

As the heart is one of the few tissues of the body to function continuously in an aerobic mode, the myocardium requires the highest level of ATP support. Thus, any condition that causes a decrease in CoQ_{10} could precipitate a corresponding decrease in oxidative phosphorylation of the mitochondrial respiratory chain, thus making the tissue more susceptible to free radical attack.[19] Since high free radical stress is more pronounced in advancing stages in CHF, the heart becomes even more vulnerable to lipid peroxidation. The antioxidative activity of CoQ_{10} is crucial under these circumstances.

The causes of decreased CoQ_{10} levels in patients with CHF may also arise from the increased consumption of CoQ_{10} secondary to increasing oxidative insult, which may be related to oxidative catabolism of excessive levels of catecholamines. This well-known increase in sympathetic activity that occurs in heart failure may explain the increased incidence of arrhythmias as well as a worsening of heart failure itself.

It has been well-documented by high-pressure (or performance) liquid chromatography* technology that myocardial tissue levels of CoQ_{10} are lower in cases of advanced CHF.[6] Since myocardial tissue levels of CoQ$_{10}$ may be restored significantly by oral supplementation, the use of exogenous CoQ$_{10}$ should be considered, not only for its antioxidant and free radical quenching activity, but also for its bioenergetic support.

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*A very sensitive and elegant method by which minute (very small) amounts of a given substance (compound) is separated (by chromatography) and quantitated.

It is also important to note a subgroup of patients who are vulnerable to CoQ$_{10}$ deficiency; those with CHF and coexistent coronary artery disease who are also on CoQ$_{10}$ depleting agents. Members of this subpopulation treated with HMG-CoA-reductase inhibitors to lower serum cholesterol are at risk for CoQ$_{10}$ depletion. Cholesterol production, as well as endogenous pathways for CoQ$_{10}$ production, are both compromised on HMG-CoA-reductase inhibition. This particular subpopulation of patients may need additional doses of CoQ$_{10}$ to offset the CoQ$_{10}$ depleting effects of these hypercholesterolemic agents.[20] (Fig. 1)

In summary, given the experience of these case studies of patients refractory to conventional CHF management, it is not unreasonable to consider CoQ$_{10}$ therapy as a defense against CHF resulting from long-standing hypertension, ischemia, and diastolic dysfunction. As more controlled double-blinded CoQ$_{10}$ research is performed, cardiologists and other physicians may become more comfortable in utilizing this simple and useful nutritional support for the heart.

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Puerto Rican Patients Travel to Puerto Rico: Assessing the Effect on Clinical Care

JENNIFER PLANT, B.A. AND HERBERT J. KEATING, III, M.D.

ABSTRACT—*Objective:* To examine travel habits of Puerto Rican patients and assess the potential effect of this travel on their health care. *Design:* Interview and survey of patients. *Setting:* Urban medical clinic. *Patients:* Two hundred consecutive, self-identified Puerto Rican patients presenting for follow-up care. *Intervention:* Immediately prior to a follow-up office visit, patients were interviewed in either Spanish or English.

***Measurements:* The patients' age, sex, education level, employment status, and place of birth were recorded. The patients were asked questions concerning the principle place of residence of their family members, their ability to speak English, and their preferences in television and radio programs. Patients who had visited Puerto Rico were asked about the duration and purpose of their most recent trip and about the health care they received in Puerto Rico. Chi-square testing was applied to categorical data and t tests for continuous data; P values were calculated using the SPSS statistical analysis program.**

***Results:* Of the 200 subjects, 110 (55%) had traveled to Puerto Rico in the last five years and 90 (45%) had not. The patients who traveled were more likely to have been born in Puerto Rico, less likely to speak English, and less likely to listen to English-language programs. A majority of the patients who traveled to Puerto Rico visited for a month or less (80%) and did not experience a change in health care (78%). In comparison, however, a majority (59%) of the patients who visited for longer than a month did experience a major change in their health care status ($P < .00001$).**

***Conclusions:* Puerto Rican patients, particularly those born in Puerto Rico with stronger cultural "ties" to the island, frequently return to Puerto Rico. Patients who visit for longer than a month often experience changes in care which are likely to have significant effect on their health. Clinicians caring for Puerto Rican patients should ask about upcoming visits to Puerto Rico and take steps to assure continuous and coordinated medical care.**

Introduction

AMERICANS of Puerto Rican origin presently constitute a large segment of the Hispanic population of the United States, especially in the Northeast, and their numbers continue to grow.[1,2] Sánchez-Ayéndez has recognized that "an important trend in the dynamics of the Puerto Rican migration is a constant ebb and flow of the migrant population between the country of origin and the United States. This is not a characteristic of other Hispanic or ethnic groups, and is a direct consequence of the political relationship between the two countries."[3] The National Coalition of Hispanic Health and Human Services Organizations notes that this pattern is "extremely stressful to families and has significant implications for families' use of health-care services,"[4] yet no systematic study of this traveling pattern and its effect on care has been done. After a dramatic experience with one patient, we chose to study the travel patterns of Puerto Ricans who were established patients in our outpatient practice, attempting to assess the consequences of their travel on their health care.

JENNIFER PLANT, B.A., HERBERT J. KEATING, III, M.D., from the Salud Primero Project, Department of Medicine, University of Connecticut School of Medicine, Farmington and Hartford Hospital, Hartford.

Table 1.—The frequency of travel to Puerto Rico by the patients of the "travel" group. The mean number of visits for the "travel" group was 2.2, range: 1–25.

Number of visits in past five years	Number of patients
1	55
2	26
3	13
4	5
5	4
6 or more	4

Table 2.—Reasons given for traveling to Puerto Rico among patients (n=110).

Reasons for most recent trip	Number of patients
Visit family	30
Death in the family	22
Sickness in the family	9
Family emergency	9
Vacation	29
Change of residence	6
Unspecified emergency	5

Case presentation

RV, a 67-year-old Puerto Rican woman, was first seen in the Ambulatory Care Center at Hartford Hospital in September 1987. She was found to have diabetes mellitus, hypertension, and asthma. Subsequently, her blood sugar, blood pressure, and bronchospasm were moderately well controlled, but required monthly or bimonthly visits to the Center. Serum creatinine on 6 October 1988 was 1.1 mg/dL. Pott's disease (tuberculous spondylitis) and a small inferoapical myocardial infarction were diagnosed, but the patient stabilized on a drug regimen of insulin NPH 20 units every morning, lisinopril 10 mg per day, nifedipine (extended release form) 120 mg per day and atenolol 100 mg per day. A routine of office visits every three months and visiting nurse (VNA) monitoring of blood pressure, blood sugar, and medication use was established. Her last office visit was 2 April 1993, but contact with the VNA occurred 23 May 1993. The patient traveled to Puerto Rico, and, despite return visits back to the Hartford area, failed to return to the Ambulatory Care Center. On 11 June 1996, she presented to the emergency department. She was found to have a blood pressure of 210/110 mmHg, and was referred back to the Ambulatory Care Center for follow-up care.

Table 3.—The effect of duration of most recent visit to Puerto Rico on changes* in health care.

	All patients (n=110)	>1 month (n=22)	1 month (n=17)	<1 month (n=71)
Experienced change in health care	22	13	2	7
No change in health care	77	9	14	54
Patients (n) with insufficient data	11	0	1	10

$P<0.000001$ for >1 month *vs* 1 month *vs* <1 month

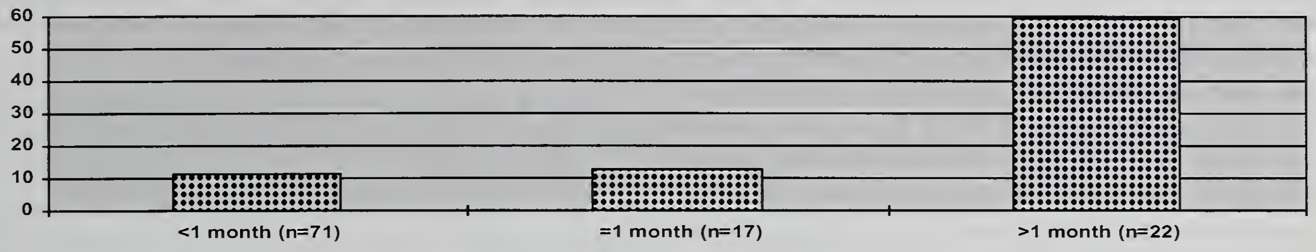
*Changes in health care defined as 1) visiting a physician in Puerto Rico, 2) new prescription in Puerto Rico, or 3) discontinuing prescribed medication while in Puerto Rico.

Table 4.—Specific changes in health care in travelers to Puerto Rico by duration of visit.

	Duration of visit		
	>1 month (evaluable patients* n=22)	1 month (evaluable patients*n= 16)	<1 month (evaluable patients*n= 61)
Visited a physician while in Puerto Rico—n (%)	11 (50%)	2 (12.5%)	2 (3.3%)
Discontinued clinic-prescribed medication —n (%)	2 (9%)	0 (0%)	2 (3.3%)
Obtained new prescription while in Puerto Rico —n (%)	9 (1%)	1 (6.3%)	1 (1.6%)

*Patients with complete data. For prescription changes, number of evaluable patients was the number known to be receiving regularly prescribed medications.

Figure 1.—Percentage of patients traveling to Puerto Rico (n=110) who experienced change in health care* by duration of visit.



***Change in health care defined as seeking care, obtaining new prescription, or discontinuing usual prescription while in Puerto Rico.**

On review of systems, the patient said she felt "tired," but denied any acute symptoms. There was no record of her care in Puerto Rico, but the patient had been told by a physician there that she no longer needed to take her insulin; in fact, she had stopped all of her medications.

On physical examination she appeared thin and chronically ill. Her blood pressure was 190/90. Her hair was dry, an S_3 gallup and fine basilar rales were audible on heart and lung examination. There was no peripheral edema. Laboratory studies revealed the following abnormalities: creatinine 6.8 mg/dL, potassium 5.1 mmol/L, phosphate 1.86 mmol/L, hematocrit 33.7% with a mean corpuscular volume (MCV) of 65 fL. Estimated creatinine clearance was 7.6 mL/min. Arrangement was made for consultation with nephrology to plan for dialysis.

Methods

The subjects included 200 consecutive, available, self-identified Puerto Rican patients who presented to the clinic for follow-up care. Each subject was interviewed prior to a routine clinic visit. The interviews were conducted in either Spanish or English and included a number of multiple choice and short answer questions. The patient's age, sex, education level, employment status, and place of birth were recorded. In order to ascertain the patient's sense of cultural and community identity,[5] the patients were asked 1) where the majority of their family members lived, 2) to assess their ability to speak English, and 3) their preferences for television and radio programs. Patients who had visited Puerto Rico in the past five years also were asked about the duration and purpose of their most recent trip and about any changes in their health care that they experienced while in Puerto Rico. A change in health care for a patient was defined as any of the following: 1) seeking health care from a physician or hospital while in Puerto Rico, 2) having medication prescribed in Puerto Rico, or 3) not taking their clinic-prescribed medication while in Puerto Rico. Data were tested with χ_2 statistics for categorical data and *t* tests for continuous data. Calculation of *P* values was accomplished using the SPSS computer program.

Results

Of the 200 subjects, 110 had traveled to Puerto Rico within the past five years and 90 had not. The patients in the two groups did not differ significantly in gender, level of education, employment status, or the place of residence of the majority of the family. The mean age of the "travel" group was slightly older: 48 years for the traveling group and 44 years for the "nontravel" group; however, this was of borderline significance (P=0.053). About three quarters of both the "travel" and the "nontravel" groups were female. Both groups consisted of patients with limited education; patients in the "travel" group had an average of 7.6 years of education, and the patients in the "nontravel" group had an average of 7.5 years. More than 80% of both groups were unemployed. Only a small portion of patients in both groups had the majority of their family members residing in the United States.

Those patients who had visited Puerto Rico in the last five years were more likely to have been born in Puerto Rico, less likely to consider themselves fluent in English, and less likely to listen to English-language radio and television programming. Of the 109 patients who traveled to Puerto Rico, 105 were born there. Of those not traveling, significantly fewer (75 of 88, P=.006) were born on the Island. Eighty-one percent of the "travel" group spoke little to no English, whereas fewer (68.5%) of the "nontravel" group spoke little to no English (P=.029). Of the patients who had traveled, 44% preferred Spanish radio and television stations, 50% chose both Spanish and English stations, and 6.4% preferred English. Of the patients who had not traveled, 42% preferred Spanish stations, 40% chose both, and 18% preferred English (P=.035).

The studied population made an average of 1.2 ± 2.3 visits in the last five years, whereas the "travel" group alone averaged 2.2 ± 2.7 visits (Table 2). Fifty-five of the 110 patients in the "travel" group visited Puerto Rico only once in the last five years. Twenty-six visited twice, 13 visited three times, five visited four times, four visited five times, and four visited six or more times. During the most recent trip to Puerto Rico, 25 of the patients stayed between zero and seven days, 29 stayed between eight and 14 days, 34 stayed between 15 days and one month, 15 stayed for more than one month to six months, and seven stayed for more than six months.

The majority of patients who traveled to Puerto Rico did so for family reasons (Table 2). Of the 110 patients who visited Puerto Rico within the last five years, 22 experienced a change in health care, whereas 77 did not (Tables 3 & 4). Fifteen patients visited a doctor while in Puerto Rico, four did not take their clinic-prescribed medications regularly while there, and 12 obtained other prescriptions while in Puerto Rico. Of the 71 patients who traveled to Puerto Rico for less than one month, only seven experienced a change in health care and 54 did not. Two visited a doctor, two did not take their medications regularly, and two obtained medications there. Similarly, of the 17 patients who visited Puerto Rico for one month, only two patients visited a doctor and one obtained medication while in Puerto Rico. However, of the 22 patients who visited Puerto Rico for more than a month, 13 experienced a change in health care; specifically, 11 patients visited a doctor while in Puerto Rico, two did not take their medications regularly, and nine obtained medications in Puerto Rico.

Discussion

We found that the majority of Puerto Ricans who are established patients in an outpatient urban clinic practice return to visit Puerto Rico. The patients who travel to Puerto Rico are more likely to have been born in Puerto Rico, are less likely to speak English, and are less likely to listen to English radio and television stations than the patients who do not travel to Puerto Rico. They most often state family-related reasons for their visits.

Patients who return to Puerto Rico have more historical, cultural, and familial ties to the Island and fewer ties to the States. These results support Schensul's observation that "[recently immigrated] families, experiencing significant cultural loss, maintain close ties with Puerto Rico, and family members seek to balance economic and health benefits obtainable in the United States with family and cultural supports in Puerto Rico."[1] Our results also support the concepts of Sanchez-Ayendez, who asserts that "the Puerto Rican family continues to play a central and essential role in the support and governance of its members … despite social changes and adaptation to life in a culturally different society."[2] That there was no difference between the two groups in the identification of the place of residence of the majority of the family was unexpected, but could be the result of the Puerto Rican's broad definition of the meaning of the term "family."[5]

While a majority of patients have traveled to Puerto Rico at some point in the last five years, most of these travelers visited for a month or less, and a majority of these did not experience a change in health care. However, a majority of patients who visited Puerto Rico for more than a month did experience a significant change in their health care, defined as a need to see another physician or an interruption or change in their medications. Although these changes should be more fully explored, perhaps in a study targeting diabetes mellitus, a common and serious problem among Puerto Ricans,[6] or hypertension, a disorder in which continuity of care has been correlated with effective control,[7] the effect of them on the care of an individual patient is likely to be important.

Practitioners caring for Puerto Rican patients should ask them about upcoming trips to Puerto Rico, which are likely in this population; particularly for trips expected to last longer than one month, steps to assure continuous and coordinated care are appropriate.

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Serotonin Syndrome: Case Report and Review of the Literature

ALAN L. WEINER, M.D., FRED F. TILDEN, JR., M.D.,
AND CHARLES A. McKAY, JR., M.D.

ABSTRACT—We present the case of a 35-year-old woman who developed serotonin syndrome after receiving a single dose of the cyclic antidepressant imipramine (Tofranil®). She was already being treated for depression with paroxetine (Paxil®), a selective serotonin reuptake inhibitor. Two hours after receiving imipramine, the patient developed tachycardia, delirium, bizarre movements, and myoclonus, all classic findings of serotonin syndrome. Her antidepressants were discontinued and she was treated with intravenous fluids, sedation, and a short course of cyproheptadine, a serotonin receptor antagonist. All symptoms resolved completely within 24 hours. In this case report, we review the drug interactions that can precipitate serotonin syndrome, and give recommendations for the diagnosis and treatment of this potentially fatal disorder.

THE serotonin syndrome is an iatrogenic complication of serotonergic drug therapy.[1-4] It is produced most often by the concurrent use of two or more drugs that increase brainstem serotonin activity.[1-2] Such drugs are widely prescribed for the treatment of depression, bipolar disorder, and Parkinson's disease. Because the symptoms of serotonin syndrome are nonspecific, there is often a delay in making the diagnosis and in discontinuing the offending drug(s). These symptoms may be incorrectly attributed to the underlying psychiatric or neurological disorder of the patient, prompting an increase in pharmacological therapy, with worsening of the patient's condition.[4]

We present the case of a woman who developed serotonin syndrome shortly after receiving a single dose of the cyclic antidepressant imipramine (Tofranil). She had been taking another (serotonergic) antidepressant, paroxetine (Paxil) for several months. Within two hours of receiving her first dose of imipramine, she developed delirium, autonomic nervous system lability, and bizarre movements, the classic triad of symptoms seen in serotonin syndrome. Following this case presentation, we discuss current theories regarding the pathophysiology of the serotonin syndrome, and give recommendations for its management and prevention.

Case Report

A 35-year-old woman was transported from a psychiatric institution to our emergency department (ED) with a sudden onset of delirium and tremulousness that had begun one hour earlier. The patient had been at the referring hospital for two weeks where she was being treated for depression. Her medications included paroxetine 30 mg daily, methadone 8 mg daily, and clonazepam 1 mg daily. Her past medical history was significant for depression, opiate abuse, and benzodiazepine abuse.

Earlier that evening, the patient was started for the first time on imipramine 50 mg orally. Two hours later, she became delirious and could not follow simple commands. There was no history of anything similar happening in the past. When the symptoms began, her temperature and

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respiratory rate were reported to be normal, while her heart rate was mildly elevated at 100 beats per minute.

In the ED, the patient continued to have a moderate tachycardia. Her vital signs were otherwise unremarkable. She lay flat on the gurney with her eyes half closed. She was in constant motion that seemed volitional, as if she could not find a comfortable position. When spoken to sharply, the movements ceased briefly, then recurred. She did not answer questions or make any attempt to speak. Pupils were 5 mm wide and briskly reactive to light. There was no evidence of cranial trauma. Lungs were clear to auscultation bilaterally. Cardiac examination revealed a regular tachycardia without a murmur. The abdomen was not distended or tender to palpation. A Foley catheter drained 200 mL of yellow urine.

The patient did not respond to commands, but seemed to have normal strength of all extremities. She withdrew and looked quizzically at the examiner when stuck lightly with a pin. Deep tendon reflexes and Babinski's test were normal. The patient's arms, hands, and legs were tremulous at rest and with motion. There was moderate clonus in all extremities.

Laboratory studies obtained included a fingerstick glucose, which was 120 mg/dL. Serum electrolytes were normal, without an anion gap. Creatinine phosphokinase (CPK) was slightly elevated at 298 IU/L. The MB fraction was within normal limits. An electrocardiogram was significant only for sinus tachycardia. A urine toxicology screen was positive only for cyclic antidepressants. Tests for cocaine and opiates were negative.

Given that the patient's symptoms of altered mental status and bizarre movements began shortly after being started imipramine, the diagnosis of serotonin syndrome was considered likely. A dystonic reaction was also considered possible, but a bolus of 50 mg of diphenhydramine had no effect. The patient was then given 4 mg of lorazepam intravenously over 40 minutes, after which her movements ceased and she appeared more comfortable. Normal saline was begun at 200 mL/hr because of the mild elevation in her CPK levels. The patient was admitted to the hospital.

Several hours after admission, the patient continued to be delirious and agitated. She was treated with cyproheptadine (Periactin®) liquid 4 mg via nasogastric tube, with improvement in her symptoms observed within one hour. She received a second dose of cyproheptadine four hours later. Over the next 24 hours, her mental status became normal. When questioned, she denied any recollection of the preceding day's events. Her course was complicated only by a mild case of rhabdomyolysis that was treated

Table 1.-Signs and Symptoms of Serotonin Syndrome
Altered Mental Status
Agitation
Anxiety
Confusion
Delirium
Hallucinations
Seizure
Unresponsiveness/ Coma
Autonomic Nervous System Dysfunction
Tachycardia
Hypertension
Hyperthermia
Mydriasis
Diaphoresis
Tachypnea
Diarrhea
Arrythmia
Neuromuscular Abnormalities
Rigidity
Hyperreflexia
Myoclonus
Tremor
Nystagmus
Trismus
Restlessness

Table 2.—Drugs Capable of Producing Serotonin Syndrome
Precursors of Serotonin Synthesis
L-tryptophan
Decreased Serotonin Metabolism
Monoamine oxidase inhibitors (including selgiline)
Increased Serotonin Release
Amphetamines
Cocaine
Fenfluramine
Inhibitors of Serotonin Reuptake
Cyclic antidepressants
Serotonin selective reuptake inhibitors
Dextromethorphan
Meperidine
Venlafaxine
Tramadol
Serotonin Receptor Agonists
Buspirone
Lysergic acid diethylamide (LSD)
Mechanism Unknown
Lithium

with aggressive intravenous hydration. She was discharged back to the referring psychiatric hospital two days after her initial presentation.

Discussion

The serotonin syndrome is a recently recognized complication of serotonergic drug therapy. Central nervous system effects of elevated serotonin levels in man were first reported in the early 1960s.[5] Oates and Sjoerdsmo reported on seven patients chronically maintained on monoamine oxidase inhibitors (MAOIs) who were each given a single dose of the serotonin precursor L-tryptophan (L-Trp).[5] Within hours, these patients demonstrated clonus, diaphoresis, restlessness, and dizziness. In a follow-up study, pretreatment with a decarboxylase inhibitor (preventing the conversion of L-Trp to serotonin) prevented these symptoms from developing.[6] In 1980 Gerson coined the phrase "serotonin syndrome" to describe this constellation of symptoms.[7]

Clinically, serotonin syndrome is characterized by the triad of altered mental status, autonomic dysfunction, and neuromuscular abnormalities (see Table 1).[3] Cases usually present shortly after either an increase in the dose of a single serotonergic medication or after the addition of a second serotonergic agent. In a review of more than 100 patients with serotonin syndrome, Mills found that more than half of the reported cases developed within two hours of a change in medication (as was the case in our patient).[2] In most cases the onset of symptoms is abrupt and obvious. Some patients may report mild, recurrent symptoms days to weeks before more severe symptoms become evident.[2] The most severe cases can present with hyperthermia, seizures, aspiration, or multiple system organ failure.[3] Although rare, serotonin syndrome has been reported to occur in children.[8]

Neuromuscular findings seen in serotonin syndrome include restlessness, myoclonus, tremor, and hyperreflexia. Bizarre motor activity may be seen, as in our patient. Increased muscle tone is seen in all cases.[2] Several reports of isolated lower extremity clonus have been reported with serotonin syndrome. This finding is considered to be fairly specific for serotonin syndrome.[9,10] It is this increased muscle tone that places the patient at risk for rhabdomyolysis and hyperthermia.[10] Our patient developed a mild case of rhabdomyolysis that was treated with intravenous hydration.

The altered mental status that accompanies serotonin syndrome is often incorrectly attributed to an underlying psychiatric illness. Anxiety, confusion, agitation, and delirium have all been reported to occur in these patients. It has been reported that up to one quarter of patients with serotonin syndrome will present in a coma.[2] Seizures, both generalized and focal, have been reported. Our patient was restless and agitated, and also demonstrated mutism for approximately 12 hours after presentation.

Autonomic nervous system instability is the third common finding seen in cases of serotonin syndrome. Tachycardia, hypertension, and hyperthermia are often seen, and in rare cases will become life-threatening.[10] Mydriasis is also frequently encountered, as is diaphoresis. The frequent presence of diarrhea in serotonin syndrome (which is useful in distinguishing this syndrome from neuroleptic malignant syndrome) is also believed to be due to autonomic nervous system dysfunction.[1]

The pathophysiology of serotonin syndrome is not fully understood. The evidence that these clinical findings are due to excessive serotonergic activity comes exclusively from animal models.[1] Serotonin syndrome can be prevented by pretreating animals with p-chlorophenylalanine, an inhibitor of serotonin synthesis, or with serotonin receptor antagonists such as methysergide.[11] Serotonin (5-hydroxytryptamine or 5-HT) is a biogenic amine secreted primarily by cells in the lower brainstem and spinal cord. A number of receptor subtypes (5-HT1-4) have been identified. Studies in animals have implicated over-stimulation of the 5-HT1A receptor as the cause of serotonin syndrome.[3] Nonselective serotonin receptor antagonists such as methysergide or cyproheptadine block the 5-HT1A receptor and prevent serotonin syndrome from occurring in mice.[12] The 5-HT2 selective antagonist ketanserin was ineffective in preventing serotonin syndrome in rats.[13] Other neurotransmitters, particularly dopamine, may play a role in the development of serotonin syndrome, but firm evidence to support this is lacking.[4]

It is critical that clinicians be able to recognize potential serotonergic drug interactions that might precipitate serotonin syndrome. A multitude of commonly prescribed agents increase the amount of serotonin free to bind the 5-HT1A receptor (Table 2). In clinical practice however, antidepressants are the class of drug most often responsible for precipitating serotonin syndrome. Until recently, most reported cases were due to the addition of a second serotonergic medication to a patient already taking an MAOI. In recent years, the number of cases due to MAOIs has declined, while the number of cases due to selective serotonin reuptake inhibitors (SSRIs) has increased.[4]

All of the available SSRIs can precipitate serotonin syndrome. Fluoxetine (Prozac®) has been implicated more frequently than the other SSRIs.[14] The active metabolite, norfluoxetine, has a half life of seven to 14 days.[15] Several cases of serotonin syndrome have developed when a patient was switched from fluoxetine to another serotonergic antidepressant without an adequate washout period to allow for elimination of the active metabolite. Currently, a five-week abstinence period is recommended before starting any new serotonergic medication after cessation of fluoxetine.[1] For the other SSRIs, a two-week abstinence period is usually sufficient. The same recommendation is made for MAOIs. A minimum of two weeks is required to regenerate new enzyme after therapy with one of these agents is halted. A recent letter to the editor questioned whether this abstinence period should be extended past two weeks.[16]

All of the currently available MAOIs are capable of producing serotonin syndrome. Most MAOIs are used to treat depression, but selegiline (Eldepryl®) is used to treat Parkinson's disease, because of its ability selectively to inhibit the MAO-B isoenzyme (thus increasing dopamine availability).[2] This selectivity in MAO-B inhibition is lost with dosages even slightly higher than therapeutic.[2] Selegiline should be viewed as having the same potential to produce serotonin syndrome as the other MAOIs.

Meperidine (Demerol) and dextromethorphan both inhibit the reuptake of serotonin. When prescribed for patients already on serotonergic medications, each can precipitate serotonin syndrome, even in a single dose.[17] Both of these medications have been used for decades with little concern over their potential for serious drug interactions. With so many serotonergic medications now available, physicians must review their patient's drug regimen carefully before prescribing either of these agents.

The diagnosis of serotonin syndrome is made completely on clinical grounds. Serotonin syndrome should be suspected in any patient who presents with the triad of altered mental status, autonomic instability, and neuromuscular abnormalities. There is no laboratory test that can confirm the diagnosis of serotonin syndrome or distinguish it from neuroleptic malignant syndrome (NMS), which has a similar presentation. History and physical examination features can usually distinguish these two iatrogenic disorders. A history of prolonged exposure to neuroleptics, especially with a recent increase in dosage, argues heavily in favor of NMS. Lead pipe rigidity is characteristic of NMS, compared with the myoclonus and hyperreflexia of serotonin syndrome.[3] Mydriasis is a common finding in serotonin syndrome but is uncommon in NMS. Diarrhea, when it is present, also lends support to the diagnosis of serotonin syndrome.[4]

Fever and muscle rigidity should raise the possibility of strychnine toxicity or tetanus.[18] In both of these conditions however, mental status is normal until hypoventilation or acidosis becomes severe. Other considerations in the differential diagnosis include fasciculations produced by sympathomimetics such as cocaine, or myoclonus resulting from drugs with anticholinergic properties, such as cyclic antidepressants. Withdrawal from alcohol or benzodiazepines should also be considered.

The treatment of serotonin syndrome is based largely on human case reports and animal models. No prospective studies evaluating the treatment of serotonin syndrome in humans has been conducted.[3] It is generally accepted that the majority of patients will do well with discontinuation of the offending drug(s), institution of supportive care, and observation for complications.[1-4,8,9,19] In a minority of seriously ill patients, antiserotonergic medications may be indicated, although the choice of which agent to use, as well as the optimal dosage and duration of therapy, is still under debate.

Once the diagnosis of serotonin syndrome has been made, the first priority is to discontinue all serotonergic medications. Supportive measures should then be instituted, to prevent complications and to ease patient discomfort. It is the complications of serotonin syndrome that are largely responsible for the reported fatalities.[1,10] These complications include rhabdomyolysis, hyperthermia, seizures, and aspiration.[10] Intravenous fluids and sedation should be given to prevent muscle breakdown and rhabdomyolysis. Enough fluid should be given to maintain a urine output of at least 2 mL/kg/hr until the threat of myoglobinuric renal failure has passed. Hyperthermia, if it occurs, is the result of muscle rigidity.[2,10] Benzodiazepines should be given for muscle relaxation, with paralytic agents being reserved for life-threatening cases. Patients with hyperthermia should be cooled rapidly with ice water and fans. Intubation should be considered for patients with profound central nervous system depression, to prevent aspiration. Finally, benzodiazepines should be used to terminate seizures, which are generally short lived and do not recur.

Alleviating symptoms through serotonin receptor blockade may be appropriate when symptoms persist beyond a few hours, or if complications are deemed likely to occur.[19] Serotonin antagonists can prevent the serotonin syndrome in animals, and both cyproheptadine and methysergide have been used to treat the serotonin syndrome in humans.[20,21] This therapy is limited, however, by a potentially delayed onset and the fact that neither agent is available in parenteral form.[19] Cyproheptadine appears to be the most effective agent in humans.[1-4] The initial dose is 4-8 mg, given orally, every four hours up to a maximum of 0.5 mg/kg/day. Anticholinergic side effects frequently complicate cyproheptadine therapy.[2] When cyproheptadine is unavailable, methysergide should be used, starting at 2 mg orally, twice to three times a day.

In most cases, serotonin syndrome is associated with an excellent prognosis. Approximately three-fourths of patients will show complete resolution of their symptoms within 24 hours.2 Even in severe cases, some improvement is usually seen in the first 24 hours. Symptoms rarely last more than three to four days unless complications occur. The judicious use of benzodiazepines, external cooling, and if necessary, paralytic agents, will prevent these complications from developing.

Conclusion

We have described the case of a woman who developed serotonin syndrome due to the simultaneous use of two serotonergic antidepressants. Although psychotropes are the class of drug most often implicated as causing serotonin syndrome, a large number of other medications can also precipitate these symptoms. As all physicians encounter patients for whom these medications have been prescribed, it is crucial that we be able to recognize serotonin syndrome and be cognizant of the drug interactions that can cause it.

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Abstracts:
Fifth Annual Meeting and Scientific Assembly of the Connecticut College of Emergency Physicians

19 November 1997

FORWARD: The Fifth Annual Scientific Assembly of the Connecticut College of Emergency Physicians was be held on 19 November 1997, at the Saybrook Point Inn, Old Saybrook. Fourteen abstracts were accepted for presentation, they are issues related to emergency medicine and are separated into two categories: six oral and eight poster presentations.

Utilization of a Pediatric 23-Hour Extended Treatment Unit

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Objective: Literature pertaining to pediatric outpatient observation units is sparse. The purpose of this study is to describe the utilization of a 23-hour extended treatment unit by patients.

Design/methods: Descriptive study, no intervention.

Setting: A 12-bed, 23-hour extended treatment unit staffed by and adjacent to a pediatric emergency department with approximately 26,000 annual visits.

Results: In 12 months, there were 23,000 emergency department visits, 1,400 23-hour extended treatment unit admissions (6% of emergency department census) and 1,645 inpatient admissions from the emergency department (7.2% of emergency department census). Eight hundred five (58%) of 23-hour extended treatment unit (ETU) admissions were emergent. Mean patient age was 77 months, range four days to two years. The most common diagnoses were asthma and bronchiolitis 18% (145/805), gastroenteritis/dehydration 15% (121/805), seizures 8% (64/805), head trauma 8% (64/805), ingestions 6% (48/805), abdominal pain 4% (32/805), psychiatric illness 3% (24/805), and fractures (not skull) 2% (16/805). There were potential medications in 30% (242/805). The mean length of stay was 14.7 hours. Eighty-eight percent of patients were discharged home. Elective use included electroencephalograph/telemetry (28%), blood product infusions (24%), orthopedic/rheumatologic procedures (16%), endocrine studies (14%), and gastrointestinal procedures (12%). Payer distribution in the 23-hour ETU differed from emergency department patients because fewer patients with Medicaid were admitted to the 23-hour ETU.

Conclusions: Emergent admissions to a pediatric 23-hour ETU are due to a variety of common pediatric problems. In this setting, utilization approaches 7% of a pediatric emergency department census. Emergent and elective admissions to a 23-hour ETU may be a reasonable alternative to inpatient hospitalization.

The Effectiveness of a Community Hospital Emergency Department as a Provider of Comprehensive Postexposure Prophylaxis During a Rabies Epizootic

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Objective: Since March 1991, when the first case of animal rabies in the current epizootic was reported in Connecticut, emergency physicians (EP) have frequently had to assess the potential for rabies virus exposure in individuals injured by both wild and domesticated animals, and develop means for postexposure prophylaxis. Because of modest demand and considerable cost, community physicians find it impractical to stock and administer rabies vaccine. As a result, emergency departments may feel obligated and responsible for completing the vaccine series. We report the effectiveness of the emergency departments as a site for both initial rabies postexposure prophylaxis and completion of the vaccine series.

Methods: A retrospective chart review was completed of all patients treated with at least one dose of human rabies immunoglobulin and human diploid cell vaccine between January 1995 and August 1996. Patients were identified from vaccine-dispensing logs maintained in the hospital pharmacy.

Results: One hundred sixty-nine patients received rabies postexposure prophylaxis. Sixty-six percent of exposures were to domestic animals, primarily dogs. Sixty-three percent of exposures were reported as bites, with the remainder reported as scratches, licks, casual, and secondary contacts. In only 10 cases (6%) were attacking animals available for observation or examination. One hundred three patients (63%) completed the five-vaccine series in the emergency departments, with six additional patients completing the series elsewhere (66% compliance). Twenty-seven patients (16%) neglected to return for vaccinations following their initial presentation. Attempts to contact them by mail or telephone met with variable success.

Conclusions: During the current animal rabies epizootic, there is substantial demand for rabies postexposure prophylaxis. Emergency departments need to design systems to track patients and ensure compliance with the entire vaccine series.

Peer Review Organization Volunteer Hospital Association Initiative to Decrease Events for Congestive Heart Failure Study: Performance of Agency of Health Care Policy and Research Congestive Heart Failure Admission Guidelines

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Connecticut Peer Review Organization

Objective: To examine the performance of the hospital admission criteria in the Agency or Health Care Policy and Research (AHCPR) clinical guideline for congestive heart failure (CHF).

Methods: Consecutive patients with congestive heart failure were entered into the study from 12 different acute care hospitals. Three hundred eighty-six data elements were extracted including five AHCPR objective admission criteria (clinical or electrocardiographic evidence of myocardial infarct, pulmonary edema, or severe respiratory distress, oxygen saturation <90% not due to pulmonary disease, anasarca, symptomatic hypotension, or syncope).

Results: From 1 January 1995 2,171 congestive heart failure patients were entered into the study. Seventeen hundred (78.3%) were hospitalized (range at individual hospitals from 59.2% to 84.8%). Seventy-one percent of all patients had at least one admission criterion, with admitted patients more likely than discharged patients to have such criteria (76.2% *vs* 52.0%, *P*<.001). Percentage of patients with individual admission criteria included: pulmonary edema or severe respiratory distress (33.3%), clinical or electrocardiographic evidence of myocardial infarction (31.0%), anasarca (26.7%), oxygen saturation <90% not due to pulmonary disease (7.3%), symptomatic hypotension or syncope (3.4%). Number of admission criteria positively correlated with probability of hospital admission (sample correlation coefficient=.965, $P<.001$). Overall performance of the rule was sensitivity 84.1%, specificity 35.9%, positive predictive value 76.2%, negative predictive value 48.0%.

Conclusion: AHCPR admission criteria are a useful aid to physician clinical judgment but should not be relied upon solely in identifying which patients with CHF need acute care hospital admission.

Anterior Glenohumeral Dislocations in the Emergency Department: Do Prereduction Radiographic Findings Influence Patient Management?

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Study objective: To determine whether prereduction radiographs alter the emergency department management of patients with anterior glenohumeral dislocations.

Methods: This study was a retrospective chart review of 199 patients who presented with 244 anterior shoulder dislocations over a five-year period from January 1992 to February 1997. All patients in the study were seen in the Yale-New Haven Emergency Department. Criteria for the study included patients with a complete medical record including an emergency department note, and a prereduction radiographic report dictated by a radiologist. Patients were grouped into two age groups for comparison of data (over 45 years of age and 45 years and under). Of the 244 patients with an anterior dislocation, 207 met all the criteria for the study.

Results: Seventy-nine prereduction radiographs had or were suspicious for fractures and other abnormalities. Forty-two of these radiographs had Hill-Sach/humeral head fractures. Other findings included 18 greater tuberosity fractures, 18 Bankhart/glenoid fractures, an acromion fracture, and a coracoid process fracture. Every patient had closed reduction attempted except six patients who reduced their own shoulder or had spontaneous reduction after their films. There was no evidence that emergency department management was altered in any of these cases based on prereduction radiographic findings.

Conclusion: Findings on prereduction radiographs rarely alter the management of patients with anterior shoulder dislocations in the emergency department. Reducing the number of patients who receive prereduction radiographs will benefit both the physician and the patient. This will not only reduce costs but it will reduce patient length of stay, allow for more immediate and easier shoulder reduction, reduce patient suffering, and reduce the need for sedation.

Effect of Administrative Barriers on Emergency Department Physician Ordering of Standard Radiographs for Nasal and Acromioclavicular Joint Injuries

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Objective: To determine whether physicians' ordering of radiographs for the evaluation of nasal and acromioclavicular (AC) joint injuries could be influenced by eliminating routine availability of these studies.

Design: Retrospective case-control. Emergency physicians caring for adults with nasal area or shoulder injuries in a 65,000 adult visit urban hospital emergency department with an emergency medicine residency were studied. Beginning November 1994, through an emergency department initiative in collaboration with the department of radiology, nasal and acromioclavicular joint plain radiographs could be obtained only with preauthorization of the covering radiology attending.

Results: The number of nasal bone and acromioclavicular joint radiographs ordered during three calendar years was examined. For each radiograph, there was a one-year (calendar year 1994) preintervention period, and two subsequent 12-month postintervention periods. The number of nasal bone radiographs ordered declined from 166 in 1994 to 10 in 1995 and to four in 1996. No increase in the number of facial series plain films occurred during the study period. The number of acromioclavicular joint radiographs ordered declined from 35 films in 1994 to five in 1995 and eight in 1996. Analysis of radiograph ordering rates per thousand emergency department visits revealed significant decreases for both tests ($P<.001$, X2). The elimination of routine ordering of nasal bone and acromioclavicular joint radiographs resulted in an estimated savings of >$30,000 per year in patient charges without affecting clinical outcome.

Conclusion: Adoption of an interdepartmental policy that prohibits physicians from routinely ordering radiographs of limited clinical value results in significant reduction of radiograph use without adversely affecting patient care.

A Comparison of Two Bedside Tests for the Detection of Salicylates in Urine: Preliminary Results

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Routine screening of serum for salicylates is frequently done on overdosed patients, despite studies that show the yield of such testing to be very low. Several reagents are available for rapidly detecting the presence of salicylate in urine, but the sensitivity and specificity of these tests in the overdose population remain unknown. The purpose of this study was to compare the utility of two reagents, ferric chloride and Trinder's Reagent (hydrochloric acid, mercuric chloride, and ferric nitrate, nonahydrate) in detecting salicylate in the urine of patients suspected of drug overdose.

Methods: Any patient suspected of drug overdose was eligible for the study. One milliliter aliquots of the patient's urine were added to 2 mL of ferric chloride and then to 2 mL of Trinder's Reagent. Any change to a darker color was considered a positive test. Results of urine testing were compared to the serum level.

Results: Fifty-one patients have been entered into the study. The sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) of the tests are shown below.

Sensitivity	Specificity	PPV	NPV
100%	69%	30%	100%
100%	64%	27%	100%

Conclusions: Our preliminary results indicate that a negative screening examination with either reagent rules out salicylate toxicity and precludes the need for a more expensive serum level. Better training of providers in differentiating subtle color changes may decrease the false positive rate. Large numbers of patients are needed to confirm these preliminary findings.

Use of N-Acetylcysteine in *Amanita phalloides* Mushroom Poisoning

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ABSTRACT—Systemic toxicity from mushroom poisoning is an uncommon occurrence and the associated morbidity and mortality are primarily due to ingestion of *Amanita phalloides*. We present the case of a 76-year-old woman with *Amanita* poisoning who was treated with N-acetylcysteine along with standard resuscitative/detoxification measures. The patient developed hepatotoxicity, but recovered fully. We suggest that N-acetylcysteine may have moderated the amatoxin-induced hepatotoxicity and that it could be considered as a part of the treatment protocol for *Amanita phalloides* ingestion.

Verification of Endotracheal Intubation Using Ultrasound

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Objective: Verification of endotracheal tube placement is a vital step in airway management. Current techniques include: auscultation, end-tidal carbon dioxide measurement, assessment of resistance to suction, and direct laryngoscopy. This study is undertaken to evaluate the use of ultrasound in the verification of endotracheal tube placement.

Methods: A nonblinded prospective study of 10 endotracheally intubated patients in an intensive care unit were evaluated using standard B-mode ultrasound of the trachea. These images were compared with those obtained from studies of the airway in healthy, nonintubated volunteers. Further study of endotracheal intubation *vs* esophageal intubation using newly deceased patients is underway.

Results: Preliminary results indicate a distinct ultrasonographic signature from the nonintubated trachea: specifically a consistent periodic resonating echo artifact that is not present in studies of the intubated trachea.

Conclusion: There is evidence that ultrasound may add to the armamentarium of the emergency physician in verifying the placement of an endotracheal tube. These findings will need to be supported by the study of esophageal intubation and then further tested prospectively in newly intubated patients.

Outcome of First Responder Defibrillation in New Haven County

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Published studies report that providing early defibrillation by emergency medical technicians (EMTs) to patients in out-of-hospital cardiorespiratory arrest can improve survival rates from 3%-6% to 25%. We analyzed 82 sequential prehospital events involving the use of the Laerdahl Heart Start Semi-Automatic External Defibrillator for factors affecting survival in New Haven County. Of the 82 resuscitative events studied, a pulse was reported to be re-established in 15. A shockable rhythm was present in 35 (31 ventricular fibrillation—VF) and four ventricular tachycardia—VT) and pulse was restored in eight (23%). This included 6/31 (19%) patients with VF and 2/4 patients with VT. An additional seven patients had a nonshockable rhythm with restoration of a pulse with cardiopulmonary resuscitation (CPR). Only six patients were discharged alive from the hospital, five of whom presented with VF and one with VT. One survivor of VF had bystander CPR. Only two of 82 patients had bystander CPR, both of whom had a pulse reestablished in the field. No one who was asystolic was successfully resuscitated. Mean time-to-scene in persons having a shockable rhythm with restoration of circulation was 2.50 ± 1.17 minutes *vs* 3.31 ± 1.09 minutes in unsuccessful resuscitations (95% confidence limit). The difference in means of response times was not significant at $P< 0.05$. Overall, 6/35 patients (17%) patients with a shockable rhythm survived to discharge. While the in-field results for restoration of circulation conform to reported rates, the survival to discharge rates appear lower than published studies. Mean response times in both groups were within American Heart Association Guidelines and were not statistically different. Favorable outcomes were not obtained in the majority of patients with shockable rhythms. Down-time and effectiveness of first responder CPR may be hidden variables affecting survival in this study.

Creative Use of Digital Photography in the Emergency Department

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Introduction: The advent of affordable, high resolution digital cameras solves the many inconveniences of film photography. We describe a low-cost system that can be used to prepare high-quality images of visible lesions, radiographs, and electrocardiograms. The resulting documents may be stored as computer files, printed on paper, sent as electronic mail, or incorporated into a Web page accessible through the Internet.

Methods: A $900 Olympus DL-30 high-resolution (1024x768 pixels) digital camera takes photos as close as six inches from the auto-focus lens using ambient lighting, 45-degree angle lighting to enhance surface texture, or the incorporated flash. Radiographs are placed on a lighted view box and photographed using back-lighting with the flash disabled. Electrocardiograms are imaged with the flash on. The images are downloaded to a desk-top computer using the Photodeluxe® software included with the camera. They are then cropped and color enhanced as necessary and saved as *.jpg* files. At the same time, clinical text is entered into a Word 7.0® table which includes the date, record number, image number, and a narrative of the case. Files are easily retrieved for case conferences. A Web page is in the development stage.

Results: For a modest initial outlay and minimal operating expenses, digital clinical photography provides a valuable tool for teaching and documentation in the emergency department.

Ketamine—An Emerging Drug of Abuse In Connecticut

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Ketamine hydrochloride, a derivative of phencyclidine (PCP), is a potent hallucinogenic drug. Despite an increasing frequency of ketamine abuse nationwide, the medical literature contains almost no information on ketamine abusers presenting to the emergency department. We have constructed the first case series of patients presenting to the emergency department after ketamine abuse.

Methods: Cases of ketamine abuse reported to the Connecticut Poison Control Center were identified retrospectively. Only those cases where medical records were available for review were included in this case series.

Results: Over the last year, 20 cases of ketamine abuse were reported. Of these, 12 medical records were available for review. These included nine men and three women aged 15 to 40 years. Routes of administration included intramuscular (n=7), smoked (n=3), and inhaled (n=2). Common presenting complaints included anxiety, palpitations, hallucinations, and rigidity. The most frequent findings on physical examination were tachycardia (n=5), mydriasis (n=5), agitation (n=3), and nystagmus (n=3). Emergency department treatment consisted of narcan (which had no effect), benzodiazepines for sedation, activated charcoal, and intravenous fluids. Known complications of ketamine abuse, such as hyperthermia and rhabdomyolysis were not seen in this cohort. Two patients were admitted for persistent mental status changes, all others were discharged. Median time in the emergency department was three hours.

Conclusions: Emergency physicians must be aware of the common presenting symptoms and potential complications seen in patients who have abused ketamine.

Trauma Procedure Course for Emergency Medicine Residents

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There has been a significant decrease in cases with penetrating trauma even at the larger trauma centers. Increasing numbers of emergency physicians complete their training with little exposure to invasive life-saving procedures such as resuscitative thoracotomy, surgical airway, etc. Although these are uncommon in the emergency department, they must be performed quickly, decisively, and with great skill in order to be successful. Cadaveric and animal laboratories are costly and difficult to arrange. Postmortem procedures for the purpose of teaching in the emergency department are highly controversial.

During the 1995-96 academic year we proposed to prepare a course which emphasized trauma procedures and pertinent clinical anatomy for the emergency medicine residency program at Lincoln Hospital. We are a designated Level 1 Trauma Center. Emergency medicine residents throughout the greater New York area rotate through our trauma facility. Our goal was to develop in our residents an expertise in trauma resuscitation and begin to expand their role as educators for the junior residents and rotators.

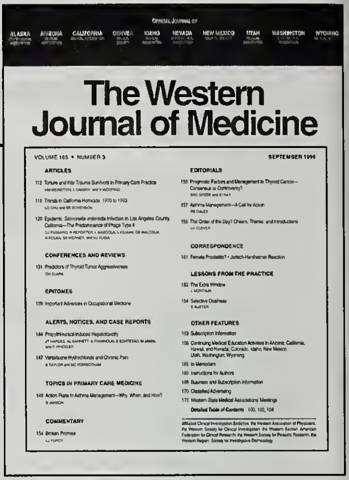
In the 1996-97 academic year the course was implemented in one-hour blocks once a month as part of the weekly educational conference. The program breakdown was as follows:

- Surgical airways
- Central venous and interosseous access
- Closed thoracostomy (chest tube) airways
- Resuscitative thoracotomy Part I (entering the thorax)
- Resuscitative thoracotomy Part II (control of tamponade, hemorrhage, and air embolus)
- Diagnostic peritoneal lavage and sigmoidoscopy-anoscopy
- Perimortem cesarean section

The course was prepared and taught by emergency medicine II residents. The format consisted of a brief case presentation with management and discussion. The indications for the procedure were then discussed. The actual procedure mechanics were then presented emphasizing the method selected by residents and faculty as most appropriate to the emergency department setting. Pertinent anatomy was illustrated using slides, diagrams, and human models at small work stations. At these stations instruments and technique were demonstrated and questions answered.

During year two, demonstration instrument sets were developed for each procedure. An outline of each procedure, the indications, and pertinent anatomy were included along with labelled instruments. These were used in a less formal setting to practice these techniques for the benefit of rotators and junior residents.

In the 1997–98 academic year we plan to add testing before and after the course for the emergency medicine residents. We will also be giving a one-day course sponsored by New York chapter of the American College of Emergency Physicians for residents, medical students, nurses, and physician assistants in the greater New York area in the Spring of 1998. There will be a comprehensive syllabus provided.



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Important Advances in Clinical Medicine

Pathology

Yutaka Kikkawa, M.D., Section Editor

The Council on Scientific Affairs of the California Medical Association presents the following epitomes of progress in pathology. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, as to both scientific fact and clinical importance. The items are presented in simple epitome, and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist busy practitioners, students, researchers, and scholars to stay abreast of progress in medicine, whether in their own field of special interest or another.

The epitomes included here were selected by the Advisory Panel to the Section on Pathology of the California Medical Association, and the summaries were prepared under the direction of Yutaka Kikkawa, M.D., and the panel.

Laboratory Work-up of Patients with Heritable Thrombotic Disorders

THE evaluation of patients with heritable thrombotic disorders has been improved by several diagnostic breakthroughs. In 1993, after it was observed that plasma samples from some individuals with inherited thrombophilia were resistant to the anticoagulant action of activated protein C, it was discovered that this resistance was due to a point mutation in the heavy chain of the factor V molecule (arginine 506 →glutamine) toward which activated protein C is targeted. This mutation has an incidence of about 5% in individuals of European Caucasian ancestry and is the most common cause of hereditary thrombophilia. It accounts for about 21% of all cases of thrombosis. In heterozygotes and homozygotes, the risk of thrombosis is increased 5- to 10-fold and 50- to 100-fold, respectively, over that of the general population.

Although the defect can be screened for by a modified activated partial thromboplastin time (APTT) test mixing patient plasma with and without activated protein C ("activated protein C resistance testing"), confirmation of the presence of the gene defect (referred to as "factor V Leiden") requires DNA analysis. With an incidence of 5% in the general population, it is not surprising that this defect is characterized as one with low penetrance, since it affects only a small percentage of those individuals that do carry it. In fact, clinical expression may often require the presence of another risk factor, either hereditary or acquired. Because of the low penetrance, mass screening programs for this abnormality are not advocated.

In 1994, a relationship between mild hyperhomocysteinemia and venous thrombosis was clearly demonstrated, although the association between homocysteinemia and arterial thrombosis had been known as far back as the 1960s. Mildly increased levels of homocysteine, a sulfhydryl amino acid enzymatically derived from methionine, were found to occur in about 20% of patients with juvenile venous thrombosis. In addition, increased levels of homocysteine have been found in 10% of patients with first-time thrombosis.

In the general population, enzyme defects that can cause hyperhomocysteinemia have a frequency of about 0.5%. More commonly, the disorder is acquired secondary to nutritional deficiencies of folate, B_{12}, and pyridoxine—especially in older adults—even with normal serum vitamin levels. Hyperhomocysteinemia can be diagnosed by measuring fasting plasma levels, since those reference ranges are most readily available, although some have advocated measuring plasma levels after oral methionine loading as a more sensitive assay. If diagnosed, whether acquired or hereditary, daily doses of vitamins have been recommended in adults: 1 mg folic acid, 0.4 mg cobalamin, and 100 mg pyridoxine (the latter of which is 50 times the recommended daily allowance).

In comparison to the 21% incidence of factor V Leiden in unselected patients with thrombosis, other less common causes of hereditary thrombophilia include protein C deficiency, protein S deficiency, and antithrombin III

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deficiency, with incidences of 3%, 2%, and 1%, respectively, in the general population. Deficiencies of protein C and antithrombin III are best diagnosed by using functional assays rather than immunoassays. Deficiencies of protein S are best determined using immunoassays, since functional assays for protein S can be falsely positive due to the presence of activated protein C resistance.

Two important nongenetic causes of thrombophilia to be considered in an initial laboratory screen for risk factors are the lupus anticoagulant and hyperlipidemia. Some uncommon genetic risk factors for thrombosis include dyefibrinogenemia, plasminogen deficiency, tissue plasminogen activator deficiency, excess plasminogen activator inhibitor, and heparin cofactor II deficiency.

If an asymptomatic individual with hereditary thrombophilia (excepting hyperhomocysteinemia) is exposed to an additional risk factor for thrombosis, including immobilization in bed, pregnancy, and major surgery, prophylactic treatment with subcutaneous heparin may be indicated. If an individual with hereditary thrombophilia has a life-threatening thrombotic episode, another genetic defect, or a sustained lifelong risk factor, long-term prophylactic anticoagulant therapy with coumadin may be indicated.

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Determining the Number of Copies of HIV-1 RNA in Plasma: Applying This New Test to Management of Patients

THE ability to determine the number of copies of HIV-1 RNA in plasma, also known as "viral load," has added a valuable tool to the clinical armamentarium available for the management of patients with HIV-1 infection. Several laboratory procedures are now at hand to perform these quantitative studies, including reverse-transcriptase polymerase chain reaction (RT-PCR), branched DNA (bDNA), and nucleic acid sequence-based amplification (NASBA). All of these methods have been found to be highly reproducible, and the results obtained with the three systems have shown good correlation.

In patients who are infected with HIV-1, the number of HIV-1 RNA copies rapidly increases over a period of several weeks until the immune system mounts a response to the virus. As a result of the immune response, the number of HIV-1 RNA copies decreases and remains stable for several years. During the late stages of infection, after a decline of the immune defenses, the replication of the virus cannot be controlled and the number of copies increases again. Thus, in general, there is an inverse correlation between the number of CD4+ cells, indicative of the immune response, and the number of HIV-1 RNA copies in plasma.

Based on several in vitro and in vivo studies, it is estimated that the life cycle of HIV-1 is 2.6 days, from the time that it infects a cell until the new progeny are produced, with a half-life in plasma of six hours. About 10 billion virions are produced per day in an infected individual. In clinically stable patients, the plasma HIV-1 RNA levels are fairly stable until the patient's health deteriorates or antiviral therapy is modified.

There are now several situations in which determining the number of copies of HIV-1 RNA in plasma is clinically useful. One is as a prognostic tool shortly after infection. Individuals in whom the number of RNA copies is >100,000/ml within six months from seroconversion are 10 times more likely to progress to AIDS over a five-year period than those with <100,000 copies/ml. Furthermore, fewer than 30% of patients with <10,000 copies/ml died within 10 years, while over 70% of those with an RNA count >10,000 progressed to AIDS and died in a 10-year period.

Determining the plasma HIV-1 RNA levels is also useful in evaluating the efficacy of antiretroviral therapy. In general, it is recommended that basal HIV-1 RNA levels be determined twice over a two- to four-week interval before initiating therapy. Although the number of RNA copies per milliliter should decrease below 5,000 following therapy, a decrease of at least 0.5 log in the number of viral copies is considered to indicate effective activity. These measurements should be made three to four weeks after starting or changing therapy. They should be repeated every three to four months, along with the CD4+ counts, in order to determine the effectiveness of the antivirals in maintaining a low viral load. A return to pretreatment values indicates that the drugs have failed to control the progression of the viral infection.

The HIV-1 viral load test has also been used as a predictor of perinatal transmission. The higher the number of HIV-1 RNA copies detected in the mother's serum late in gestation or at the time of delivery, the higher the risk of transmission of the virus to the newborn. For example, in one study, no women with <20,000 HIV-1 RNA copies/ml transmitted the virus to their newborns, while all mothers with >80,000 copies/ml did. Also, the viral load test helped to follow up on antiretroviral therapy and determine its effect on the transmission of the virus from the mother to the offspring.

In conclusion, measurement of the number of HIV-1 RNA copies in plasma, in conjunction with other clinical and laboratory parameters, can help evaluate the prognosis, staging, and progression of HIV-1 infection and assess the efficacy of antiretroviral therapy.

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Laboratory Detection of *Chlamydia trachomatis*

CHLAMYDIA trachomatis infection is the leading cause of sexually transmitted diseases in the Western world. Lower genital tract infections in females are frequently asymptomatic and therefore undetected. Infections by *C trachomatis* can involve the upper genital tract as well, leading to tubal scarring and infertility. Neonatal infections due to exposure at birth are also well-established complications. For these reasons, routine screening is recommended for those most at risk of developing a *C trachomatis* infection—sexually active adolescents and women in their early twenties and those with new sexual partners.

Tests for the laboratory detection of *C trachomatis* are based on detecting antigen, nucleic acid, or viable organisms. Since there are major differences in the performance, sensitivity, and specificity of these tests, it is important to understand these distinctions.

The first laboratory test available, the culture, was until recently the gold standard of *Chlamydia* testing. Its specificity of 100% makes it the only recommended test for children or victims of sexual abuse. Culture should detect even a single viable *Chlamydia* organism, but its sensitivity can be compromised by variables such as loss of viability upon transport or storage, differences in susceptibilities of cell lines, and stains used in the culture technique. Furthermore, there is no standard culture method, so results vary widely between laboratories.

The first commercially available assays were based on the detection of chlamydial antigens using polyclonal and/or monoclonal antibodies that recognize either the major outer membrane protein or lipopolysaccharide of the organism. Today, antigen detection tests range from a 20-minute paper- or wafer-based assay to a three- to four-hour enzyme immunoassay (EIA). The specificity of the assays is, with few exceptions, acceptable (>98%). Reported sensitivities of these tests vary tremendously, neutralizing any comparison based on literature review. Most evaluations of the antigen-based assays have used culture as a gold standard but, since the sensitivity of the culture method can vary, the apparent sensitivity of the antigen detection method fluctuates. When DNA amplification methods are run in parallel with culture, the sensitivity of the antigen-based assays ranges between 50% and 70%. Therefore, while these assays may be convenient in terms of time, simplicity, and cost, many are too insensitive for routine screening. DNA hybridization methods, which are labor intensive, have proven to yield sensitivities and specificities similar to the antigen-based methods.

The most sensitive means of *Chlamydia* detection so far are the commercially available nucleic acid amplification-based assays, such as polymerase and ligase chain reactions. They are estimated to be 10% to 20% more sensitive than culture. A great advantage is that urine has been shown to be an acceptable specimen for detecting *C trachomatis.* This is a significant advance, especially for testing males, since it makes a urethral swab unnecessary. These assays are more expensive than the antigen detection assays, however. They are also more technically demanding—they require sophisticated equipment and an average of four to five hours. Inhibition of the assay has been reported, but future generations of the tests promise to improve on these problems.

In summary, antigen detection methods, while easy to perform and readily available, have low sensitivity. Due to the technical requirements of DNA amplification, the most sensitive method for *Chlamydia* detection, the test is generally not found in small laboratories but in more centralized testing facilities. Culture, due to its variability and tight restrictions of specimen collection and transportation, is impractical for most small laboratories but can be found in large teaching hospitals and reference laboratories.

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Diseases Associated with the Major Histocompatibility Complex

THE major histocompatibility complex (MHC) is a genetic region that encodes for class I and class II molecules and a variety of other proteins. The class I and class II molecules are human leukocyte antigen (HLA) proteins and are essential for the immune system to recognize and respond to foreign antigens. This region of the genome is diverse, with hundreds of alleles of the different HLA genes. Because of its importance in organ transplantation, the MHC locus has been the focus of many studies; many of the alleles are known. Other than HLA antigens, the MHC encodes for a variety of other proteins including proteins from the complement system and tumor necrosis factor (TNF).

Some HLA alleles have been found to be correlated with specific diseases, so determining a patient's HLA type is useful in diagnosing a disease, diagnosing a variant of a disease, predicting a person's susceptibility to a disease, or predicting the course of a disease. There are several explanations for the predictive value of HLA types. Many infectious and autoimmune diseases are influenced by the immune response. Different HLA types may be associated with differences in immune responses and may make an individual susceptible or resistant to a particular disease. Also, the MHC region is densely packed with genes, many of which are important for function. Hence, mutations in this region of the genome are more likely to result in a disease than mutations in a region of the genome that has very few coding regions. Furthermore, the MHC region may be a "hot spot" for mutagenesis. Finally, the polymorphic nature of this region means that a mutation in or near the MHC complex is likely associated with a specific HLA type that is not found in many people. Hence, specific HLA types can serve as markers that are linked with defective genes in this region.

While diseases have been known to be correlated with specific HLA loci for some years, recent advances in molecular biology have resulted in the discovery of many more disease associations. Classic serologic techniques define an HLA type by reactivity of an antibody or antisera with HLA molecules. DNA analysis has shown that one classic HLA type can be further subdivided into a set of alleles with slightly different sequences. These alleles are known as subtypes of an HLA type. If a disease is associated with only one particular HLA subtype, then studies employing classic serologic techniques might fail to establish a statistically significant correlation between the disease and HLA markers. In these cases, molecular techniques can determine HLA subtypes and might establish that one HLA subtype is associated with the disease.

HLA studies can help investigators classify diseases. Juvenile rheumatoid arthritis (JRA), for example, can have several presentations. Researchers proposed classifying JRA into various subtypes based on clinical features and then found that different JRA subtypes correspond with different HLA subtypes. This provides evidence that different forms of JRA arise from different pathophysiologic mechanisms and may be responsive to different therapeutic interventions.

Diseases that are associated with specific HLA types or subtypes include ankylosing spondylitis, type 1 diabetes mellitus, Behçet's disease, celiac disease, Grave's disease, Hashimoto's thyroiditis, Hodgkin's disease, idiopathic membranous nephropathy, idiopathic nephrotic syndrome, multiple sclerosis, narcolepsy, C2 deficiency, C4 deficiency, congenital adrenal hyperplasia, idiopathic hemochromatosis, gluten-sensitive enteropathy, pemphigus vulgaris, cicatrical pemphigoid, Goodpasture's syndrome, juvenile rheumatoid arthritis, and rheumatoid arthritis. In addition, susceptibility to malaria infection and rapid or slow progression of HIV infection are associated with specific HLA types.

For most diseases, molecular techniques that determine HLA subtypes provide the most useful information. These studies can be complicated, however, because in some diseases, such as type 1 diabetes, certain HLA subtypes (DQA1*0301, for example) are associated with an increased risk of contracting the disease but other subtypes (DQA1*0102, for example) are associated with a decreased risk of contracting the disease.

Some of the diseases with the strongest associations with specific HLA genotypes in the general population are ankylosing spondylitis, narcolepsy, and celiac disease. HLA typing can be useful in many other diseases, however. Often when a family member has a disease, the family and physician want to know the likelihood that other family members will develop the disease. In these cases, comparing the HLA type of the proband with relatives can provide useful information even if the disease does not have a strong correlation with particular HLA subtypes in the general population. Also, in specific clinical situations, HLA testing may help refine a differential diagnosis or predict the progression of an illness.

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Kaposi's Sarcoma-Associated Herpesvirus (KSHV): A New Viral Pathogen Associated with Kaposi's Sarcoma, Primary Effusion Lymphoma, and Multicentric Castleman's Disease

KAPOSI'S sarcoma-associated herpesvirus (KSHV), also known as human herpesvirus 8 (HHV-8), is a member of the gammaherpesvirinae subfamily of herpesvirus that are characterized by the ability to replicate in lymphoblastoid cells. KSHV is related to Epstein-Barr virus (EBV) and herpesvirus saimiri (HVS) and is the first member of the genus *Rhabdinovirus* known to infect humans. Viral DNA was first discovered in Kaposi's sarcoma lesions by Chang and Moore, who used representational difference analysis to identify KS330Bam and KS631Bam fragments. As shown by ELISA for HHV-8 antibody, the prevalence of KSHV is much lower than other human herpes viruses (EBV, HHV-6, cytomegalovirus, herpes simplex virus 1). Less than 20% of normal adult donors and 33% of HIV-negative homosexual men have antibodies to KSHV. Both HIV-positive and -negative patients with Kaposi's sarcoma have antibodies to KSHV (titer >1280 in most cases), and seroconversion has been documented before the development of Kaposi's sarcoma. KSHV also is now known to be associated with a new lymphoma subtype, primary effusion lymphoma, and with lymphoid proliferations resembling angioimmunoblastic lymphadenopathy with dysproteinemia (AILD) and multicentric Castleman's disease.

Primary effusion lymphoma occurs predominantly in HIV-infected male patients; the primary symptom is lymphomatous effusions (pleural, pericardial, or ascitic) without a contiguous tumor mass. Primary effusion lymphomas mainly occur in older patients (most in the fourth decade of life) and with more advanced disease than Burkitt-like lymphomas. The patients are usually severely immunosuppressed (T cells <100/mm^3), and most have prior manifestations of AIDS, including opportunistic infections. Morphologically, the tumors resemble B cell immunoblastic and large-cell anaplastic lymphomas. In most patients, disease is limited to body cavities, but occasional cases have involved adjacent organs such as the lung, soft tissues, regional nodes, and bone marrow. KSHV-associated lymphomas have also been identified in the central nervous system and the gastrointestinal tract, in HIV-negative men, and in women. The prognosis is poor, and the majority of patients die within one year of diagnosis.

Phenotypically, primary effusion lymphomas express leukocyte common antigen (CD45), but most are negative for other B and T cell-associated antigens including CD20, CD19, and immunoglobulins. The cells have activation antigens including HLA-DR and CD30. Molecular analysis confirms derivation from late differentiating B cells, possibly at the immunoblast, plasmablast, or preplasma cell stage. Herpesvirus particles consisting of 100- to 115-nm capsids with central cores have been identified within neoplastic cells. Most cases in HIV-seropositive individuals are also positive for EBV (type A or B). Unlike most EBV-associated lymphomas, however, there appears to be no involvement of *c-myc*. They also lack *bcl-6* gene rearrangements and *ras* oncogene or *p53* tumor suppressor gene mutations. Cytogenetic studies reveal multiple chromosomal abnormalities. Preliminary data suggest that involvement of two potential oncogenes, one a cellular type D cyclin similar to the PRAD 1 oncogene involved in mantle cell lymphomas, and one homologous to the cellular G protein-coupled receptor (OCR) family of proteins. The virus contains proteins similar to human macrophage inflammatory protein (MIP) chemokines and interleukin-6 (viral IL-6), which may play a role in the pathogenesis and clinical syndrome of multicentric Castleman's disease.

KSHV has been associated with benign lymphoid proliferations from HIV-positive and -negative patients with AILD and multicentric Castleman's disease. KSHV is present in almost all cases of Castleman's disease in patients with AIDS and in approximately half the cases in HIV-seronegative patients. KSHV sequences have also been detected in peripheral blood lymphocytes from patients with Castleman's disease. Multicentric Castleman's disease occurs most often in older patients, predominantly men, and is associated with lymphadenopathy and constitutional symptoms. We have detected KSHV sequences in a child with familial multicentric Castleman's disease, and other children have been seropositive for KSHV. Patients with Castleman's disease may develop secondary malignancies, most commonly Kaposi's sarcoma and non-Hodgkin's lymphoma. In HIV-infected patients with Castleman's disease, there is a strong association between KSHV and sexual transmission, as well as the development of Kaposi's sarcoma.

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Cocaethylene: A Novel Cocaine Homolog

COCAETHYLENE (CE) is a pharmacologically significant homolog of cocaine, formed by transesterification of cocaine with ethanol when the two are ingested concurrently. This reaction is mediated by a hepatic carboxylase which, in the absence of ethanol, catalyzes the production of benzoylecgonine, the major urinary metabolite of cocaine.

As is the case for cocaine, CE binds to the dopamine transporter and inhibits dopamine uptake into synaptosomes. The behavioral pharmacology as well as the psychomotor stimulant effects of CE are similar to those of cocaine, but the toxicity of CE is greater than that of cocaine, and its LD_{50} is much lower. Furthermore, the plasma half-life of CE in humans is longer than that of cocaine, and plasma concentrations of CE often exceed those of cocaine itself. Taken together, these factors make CE a compound of toxicological importance.

Recent work has demonstrated that CE binds with high affinity to human serum alpha-1 acid glycoprotein (orosomucoid) and with low affinity to serum albumin. Human brain, heart, liver, and placenta also bind both cocaine and CE.

Both cocaine and CE can be quantitated simultaneously in plasma and urine by high-pressure liquid chromatography. Thin-layer chromatography of urine is useful for the qualitative detection of cocaine and CE if a solvent system consisting of hexane (65 ml):toluene (20 ml):diethylamine (5 ml) is used. Both compounds can be readily visualized as reddish-brown spots after the plate is sprayed with iodoplatinate (cocaine, R_f 0.44; CE, R_f 0.51). Furthermore, both are metabolized to benzoylecgonine, which can be easily detected by qualitative immunoassay of the urine.

While not likely to be encountered clinically, the isopropyl and propyl homologs of cocaine (cocaisopropylene and cocapropylene) have also been described, and their formation has been demonstrated by incubation of human liver homogenates with isopropanol and *n*-propanol, respectively. These compounds, if present in urine, can be detected by thin-layer chromatography.

Detection of CE and other cocaine homologs is clinically important since their presence may help explain persistence of drug effects after the parent drug has dissipated.

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Peripheral Parenteral Nutrition: An Underused Nutritional Modality

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THE use of central venous catheters for administration of parenteral nutrition (PN) has been the standard procedure since its introduction by Dudrick et al in the late 1960s.[1] This method of administering PN became the standard of practice because of the rapid development of peripheral vein thrombophlebitis (PVT) with the administration of hypertonic dextrose as the primary energy source. However, the insertion of central venous catheters is not without hazard. Complications of insertion include pneumothorax, arterial puncture, and hematoma which has been reported to occur in 3% to 12% of patients.[2] The incidence of central venous catheter-related sepsis ranges between 3% and 14%, and the cost of a single episode of sepsis associated with this mode of administration is estimated to be between $3,000 and $10,000 in Great Britain, and most likely is more expensive in the United States.[2,3] In addition, the cost of placing a central line is significantly more expensive than peripheral line placement. With the advent of new catheter technology, new techniques for infusion, and recent evidence that energy requirements in hospitalized patients are lower than originally calculated, it is now feasible to administer PN via the peripheral route in selected patients for short-term therapy (<7-10 days).

Etiology of PVT

The etiology of PVT is multifactorial with the precise interplay of the mechanisms for its development being uncertain.[3] Although there is no universal definition of thrombophlebitis, it is usually defined in clinical practice as the presence of two or more of the following signs: pain, erythema, swelling, excessive warmth, or a palpable venous cord.[4] It is postulated that the initial event in the pathogenesis of PVT is vasoconstriction at the tip of the intravenous catheter, which occurs as a response to irritation of the endothelium by the catheter itself or by the solution infused. Vasoconstriction is thought to initiate a cascade of events that can lead to severe PVT and extravasation (Fig. 1).[3,5]

Bacterial colonization of peripheral catheters is not uncommon but there is poor correlation between the presence of PVT and bacterial contamination of the catheter. However, because of the potential of bacterial colonization and PVT, it is essential that strict aseptic technique be utilized for peripheral catheter placement as well as routine care of the catheter site.[3]

Catheter Properties

The properties of the catheter that influence the development of PVT include diameter, length, and catheter composition. A stiff catheter is more likely to cause endothelial damage than a flexible catheter. Polyvinyl chloride catheters have been shown to produce a significantly greater incidence of PVT than polyethylene, tetrafluroethylene, and fluroethylenepropylene catheters.[6] Subsequently, a prospective clinical, phlebographic, and postmortem study showed that the incidence of central venous thrombosis was significantly lower with silicone elastomer (20%) and polyurethane (17%) catheters when compared to polyethylene catheters (70%).[7] In addition, the use of polyurethane catheters has been shown to

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Table 1.—Approximate Osmolality of PPN Solutions[12]

PPN formula*	Osmolality (mOsm/L)†
3% amino acid with 5% dextrose	702
3.5% amino acid with 5% dextrose	752
3% amino acid with 7% dextrose	803
4.25% amino acid with 5% dextrose	827
3.5% amino acid with 7.5% dextrose	878

*I.V. lipid emulsion should be administered concurrently with these formulations.

†Osmolality assumes mOsm/kg = mOsm/L and includes the addition of electrolytes, intravenous multivitamins, and trace elements.

produce a lower incidence of complications including PVT when used peripherally compared to the use of silicone catheters.[3,8] Polyurethane catheters also have the advantage over silicone of being stronger and having a greater internal diameter for the same external diameter of silicone catheters.[5] This latter property results in less risk of catheter occlusion.

Besides using less thrombogenic catheter material, long fine-bore catheters (eg, 22 gauge) have been shown to enhance the delivery of long-term phlebitis-free infusion of peripheral parenteral nutrition (PPN). A longer catheter(≈ 15cm) may be beneficial because it is more likely that the tip of the catheter will be in a larger diameter vein and result in delivery of PN solution into blood with a greater flow rate. The apparent advantage of fine-bore catheters over standard IV catheters may be their ability to "float" in the center of the stream of flow in the vein so that mechanical trauma produced by contact between the tip of the catheter and the endothelium is minimized.

Figure 1.—Development of PVT[3,5]

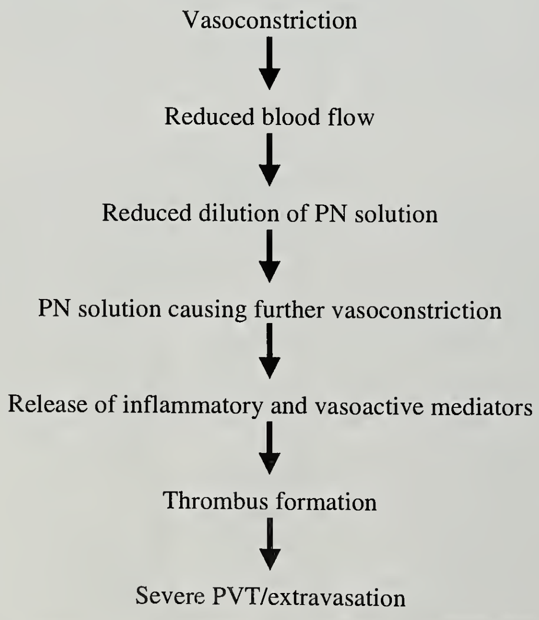
Vasoconstriction
Reduced blood flow
Reduced dilution of PN solution
PN solution causing further vasoconstriction
Release of inflammatory and vasoactive mediators
Thrombus formation
Severe PVT/extravasation

Table 2.—Patient Criteria For Short-Term PPN Therapy
1. Not hyperlipidemic.
2. Not fluid restricted (eg, congestive heart failure, renal failure).
3. Not severely catabolic with calorie and protein requirements that are attainable with PPN.
4. Have adequate venous access for PPN as determined by a IV therapy specialist.

There may also be less chance of physical trauma at the entry site by the catheter during movement with a fine-bore catheter than with a standard IV catheter.[3] Occlusion of fine-bore catheters is a potential problem but in one report, catheter patency after occlusion was always resumed, and no catheter had to be removed.[11]

Properties of PPN Solutions

Osmolality.—The osmolality of a PN solution is directly related to the incidence of PVT. Glucose, amino acids, and electrolytes are the components of PN solutions that contribute the most to osmolality.[3] It has been demonstrated that if the osmolality of the amino acid-dextrose solution with electrolytes is maintained below 900 mOsm/kg and preferably between 600 and 800 mOsm/kg the incidence of PVT is minimized.[12] In addition, lipid emulsion which is required in PPN to provide a portion (up to 60%) of the total calories is approximately isotonic and has a diluting effect when administered concomitantly with the dextrose and amino acid solution. Thus, the final osmolality entering the veins lies between the osmolality of the two preparations. In addition, lipid emulsions have a pH that is almost neutral and may have a protective effect on the venous endothelium.[3] The approximate osmolality of several formulations including the addition of electrolytes, vitamins, and trace elements that would be acceptable for peripheral administration are shown in Table 1.

Heparin and/or Hydrocortisone

Low-dose heparin (1 unit/mL) delivered in the PPN has been shown to reduce the incidence of PVT. It is postulated that heparin may act by preventing or minimizing the development of the fibrin clot that forms around the tip of a catheter in a vein or as a direct result of endothelial damage. The fibrin clot may lead to thrombus formation and occlusion.[13,14]

Similarly, the addition of hydrocortisone (5 mg/L) to PPN solutions has been shown to protect against thrombophlebitis.[15] The small dose of hydrocortisone in PPN solutions has not been shown to cause adrenal suppression.[12] The use of hydrocortisone has been demonstrated to be more effective in preventing PVT when combined with heparin and it has been suggested that hydorcortisone acts synergistically with heparin.[16,17]

Other Factors Related to PVT Prophylaxis

Glyceryl trinitrate patches (5 mg) when applied proximal to the point of insertion of the catheter, over the area where the tip of the catheter is expected to lie, have been shown significantly to reduce PPN infusion failure caused by phlebitis and extravasation.[4,18] It has been demonstrated that tolerance of peripheral veins to glyceryl trinitrate does not occur.[19] Headache and skin rash have been reported with the use of glyceryl trinitrate patches but these complications are not common. Skin reactions are an indication to stop the use of the patch, but headache when it does occur is usually mild and responds to simple analgesics.[3]

The use of filtration to remove the harmful effects of particulate matter on veins in PN solutions has been suggested and shown to be effective in one report but its routine use to prevent PVT remains controversial.

Recent Clinical Studies

In 1994 Kohlhardt et al studied 46 surgical patients who were randomly allocated to receive complete PN by a peripheral or central venous delivery system.[9] The mean solution osmolality of the PPN was 1,082 mOsm. Heparin 1 unit/mL was added to each infusate. Of 23 patients receiving PPN through a fine-bore catheter, there was no catheter-related bactermia or sepsis. Three patients with central venous catheters developed bacteremia with one incident thought to be catheter related. Chemical phlebitis occurred with four catheters after a mean period of 23 days. The PPN delivery system resulted in long-term phlebitis-free infusions for periods that were similar to those of single-lumen central catheters by life-table analysis.

In another recent prospective study of 302 courses of PN, in which a PPN was used as the route of first choice, 51% of all courses of PN utilized the peripheral route alone.[20] Heparin (550 units/L) and hydrocortisone (5 mg/L) were added to the PPN solution. In addition, a 5 mg glyceryl trinitrate patch was placed over the estimated area of the catheter tip every day. The estimated osmolality of the more hypertonic PPN solution was 1,100 mOsm. A fine-bore peripheral catheter (22 gauge) was used to administer the PN solutions. Seventy-six percent of patients who received peripheral PN required only one catheter. This study suggests that a more hypertonic PN solution can be administered peripherally using fine-bore midline catheters with the addition of heparin and hydrocortisone to the PN formulation as well as the use of a glycerol trinitrate patch.

Recommendations for Administration of PPN

In selected patients, PPN can be used effectively and safely for short-term therapy (<7-10 days) which is less costly and avoids the potential serious complications of central venous catheterization. The cost of central line placement at Hartford Hospital ranges from $320 to $514 compared to $23 to $135 for a peripheral line. The patient selection criteria used at Hartford Hospital for short-term PPN are shown in Table 2. For optimal PPN therapy, it is recommended that a small-bore polyurethane or silicone midline catheter be placed in the largest palpable vein in the proximal forearm or the antecubital fossa. An IV therapy specialist should be available for evaluation, insertion, fixation, and care of the catheter. The osmolality of the PN solution should be minimized to approximately 700-800 mOsm with intravenous lipid emulsion administered concurrently over 24 hours to provide up to 60% of the patient's calorie requirements. The use of heparin (1 unit/mL) and hydrocortisone (5 mg/L) in the PPN solution should be considered to further reduce the incidence of phlebitis as well as the use of glyceryl trinitrate patches (5 mg) placed over the area of the catheter tip (daily or every other day). By using these techniques, it is now feasible to administer PPN without the development of PVT for seven days or more.

Conclusion

With the advent of new catheter technology and new techniques for infusion it is now feasible to administer PPN in selected patients for short-term therapy (7-10 days) with a low incidence of PVT. This will allow PPN to be used as a holding regimen pending reassessment of nutritional needs and will avoid the high cost and serious potential complications of central venous catheterization.

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Mortality Patterns—Preliminary Data, United States, 1996

IN 1996, the estimated number of deaths in the United States totaled 2,322,265, slightly higher than the final total in 1995 of 2,312,132. Despite this slight increase in the total number of deaths in 1996, the preliminary crude death rate (875.4 per 100,000 population) declined slightly from that in 1995 and was equal to the crude death rate in 1994; in addition, in 1996 the age-adjusted death rate* (493.6 per 100,000 U.S. standard population) reached an all-time low. This report summarizes preliminary 1996 vital statistics data from CDC's National Center for Health Statistics (NCHS)[1] and compares these data with data from 1995 and, for life expectancy, data from 1900 to 1995. The findings indicate declines in the rates for most leading causes of death and the infant mortality rate and an increase in overall estimated life expectancy.

National mortality statistics are based on information from death certificates filed in state vital statistics offices as required by state law and are compiled by CDC into a national database. Cause-of-death statistics are based on the underlying cause of death,† which is recorded on the death certificate by the attending physician, medical examiner, or coroner in a manner specified by the World Health Organization (WHO) and endorsed by CDC. In this report, general mortality data are presented for blacks and whites only; infant mortality data are presented for non-Hispanic whites, non-Hispanic blacks, and Hispanics. For general mortality, data for smaller minority groups are not presented because of inconsistent reporting between death certificates and censuses and surveys. The findings in this report are based on 1996 data received through 8 May 1997, and represent >85% of deaths that occurred in 1996. NCHS also receives independent monthly counts of deaths registered in state vital statistics offices. To produce the estimates in this report, the sample records in the preliminary files were weighted to the independent counts of infant deaths and total deaths registered during 1996.

Preliminary age-adjusted death rates for 13 of the 15 leading causes of death declined from 1995 to 1996 (Table 1). The most substantial decline was for mortality attributed to human immunodeficiency virus (HIV) infection (approximately 26%). The age-adjusted death rates for the two leading causes of death, heart disease and cancer—which together account for more than half of all U.S. deaths—also continued to decline: heart disease mortality by 3% and cancer mortality by 1%. Preliminary age-adjusted death rates also declined for homicides (11%), suicides (4%), mortality caused by accidents§ (including motor-vehicle and all other accidents) (1%), and pneumonia and influenza (2%). In comparison, diabetes-associated mortality increased by 2%, the 10th consecutive year mortality from this cause has increased.

Overall estimated life expectancy increased in 1996 to 76.1 years, surpassing the previous high of 75.8 years recorded in 1992 and 1995. Record highs occurred for black females (74.2 years), black males (66.1 years), and white males (73.8 years). The life expectancy for white females, which has remained unchanged since 1994, was 79.6 years. The difference in life expectancy between males and females narrowed from 6.4 years in 1995 to 6.0 years in 1996, and the difference between whites and blacks narrowed from 6.9 years to 6.5 years. The largest difference in life expectancy between males and females occurred in the late 1970s, when life expectancy for females was 7.8 years greater than for males (Fig. 1).

The overall infant mortality rate (7.2 infant deaths per 1,000 live births) for 1996 declined 5% from 1995 (7.6). Declines occurred for neonates (aged <28 days), postneonates (aged 28 days through 11 months), and for non-Hispanic white, non-Hispanic black, and Hispanic infants. The three leading causes of infant mortality were

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*Age-adjusted death rates adjust for differing age distributions of population groups and are more effective for comparing relative risks for mortality among groups and over time. They should be used as relative indexes rather than as actual measures of risk. The age-adjusted rates were computed using the 1940 U.S. standard population.

†Defined by the World Health Organization's *International Classification of Diseases, Ninth Revision,* as "(a) the disease or injury which initiated the train of morbid events leading directly to death, or (b) the circumstances of the accident or violence which produced the fatal injury."

§When a death occurs under "accidental" circumstances, the preferred term within the public health community is "unintentional injury."

Table 1.—Preliminary number of deaths, death rates,[*] and age-adjusted death rates[†] for 1996 and percentage changes in age-adjusted death rates for the 15 leading causes of death from 1995 to 1996—United States.

Rank[§]	Causes of death (ICD-9[¶] code)	No.	Age-adjusted Rate	% Change from death rate	1995 to 1996
1	Diseases of heart (390-398, 402, 404-429)	733,834	276.6	134.6	– 2.7
2	Malignant neoplasms, including neoplasms of lymphatic and hematopoietic tissues (140-208)	544,278	205.2	129.1	– 0.6
3	Cerebrovascular diseases (430-438)	160,431	60.5	26.5	– 0.7
4	Chronic obstructive pulmonary diseases and allied conditions (490-496)	106,146	40.0	21.0	1.0
5	Accidents[**] and adverse effects (E800-E949)	93,874	35.4	30.1	– 1.3
	Motor-vehicle accidents (E810-E825)	43,449	16.4	16.2	– 0.6
	All other accidents and adverse effects (E800-E807, E826-E949)	50 425	19.0	13.9	– 2 1
6	Pneumonia and influenza (480-487)	82 579	31.1	12.6	– 2 3
7	Diabetes mellitus (250)	61,559	23.2	13.6	2.3
8	Human immunodeficiencyvirus infection (042-044[††])	32,655	12.3	11.6	–25.6
9	Suicide (E950-E959)	30,862	11.6	10.8	– 3.6
10	Chronic liver disease and cirrhosis (571)	25,135	9 5	7.5	– 1.3
11	Nephritis, nephrotic syndrome, and nephrosis (580-589)	24,392	9 2	4.3	0
12	Septicemia (038)	21,395	8.1	4.1	0
13	Alzheimer's disease (331.0)	21,166	8.0	2.7	0
14	Homicide and legal intervention (E960-E978)	20,738	7.8	8.4	–10.6
15	Atherosclerosis (440)	16,803	6.3	2.2	– 4.3
All other causes		346,574	130.6	75.0	**0.9**
All causes		**2,322,421**	**875.4**	**494.1**	**– 1.9**

[*]Per 100,000 population.

[†]Per 100,000 1940 U.S. standard population.

[§]Based on number of deaths.

[¶]International *Classification of Diseases, Ninth Revision.*

[**]When a death occurs under "accidental" circumstances, the preferred term within the public health community is "unintentional injury."

[††]These codes are not part of ICD-9 but were introduced by CDC's National Center for Health Statistics for classifying and coding human immunodeficiency virus infection.

congenital anomalies, disorders related to short gestation and unspecified low birthweight, and sudden infant death syndrome (SIDS). SIDS declined nearly 15% in 1996 and accounted for one third of the overall decline in infant mortality.

Reported by: Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics, CDC.

Editorial Note: Death rates and life expectancy are especially useful for monitoring the nation's health. The preliminary data for 1996 indicate that death rates have declined for causes of death such as heart disease, cancer, and cerebrovascular diseases—causes most likely to affect the elderly—and for causes of death such as unintentional injuries, homicide, suicide, and HIV infection—causes most likely to affect younger persons. Reductions in death rates for these causes, along with increases in life expectancy, indicate positive changes in U.S. mortality patterns. Although race-specific differences in life expectancy narrowed in 1996, death rates were still higher for blacks than whites, probably reflecting variations in factors such as socioeconomic status, access to medical care, and the prevalence of specific risks.

The decrease in mortality attributable to HIV infection in 1996 marked the first time deaths attributed to this cause have declined. From 1987 (when HIV infection was first reported) to 1994, HIV deaths rose an average of 16% annually. The 1995 increase of only 1.3% indicated that mortality attributable to this cause might be slowing.[2] In addition, HIV-related morbidity decreased for the first time in 1996, and the incidence of acquired immunodeficiency syndrome opportunistic illnesses declined 6% overall compared with 1995.[3] These recent decreases in HIV-related morbidity and death probably resulted from a combination of a reduced rate of new HIV infections and improvements in the medical care of HIV-infected persons.

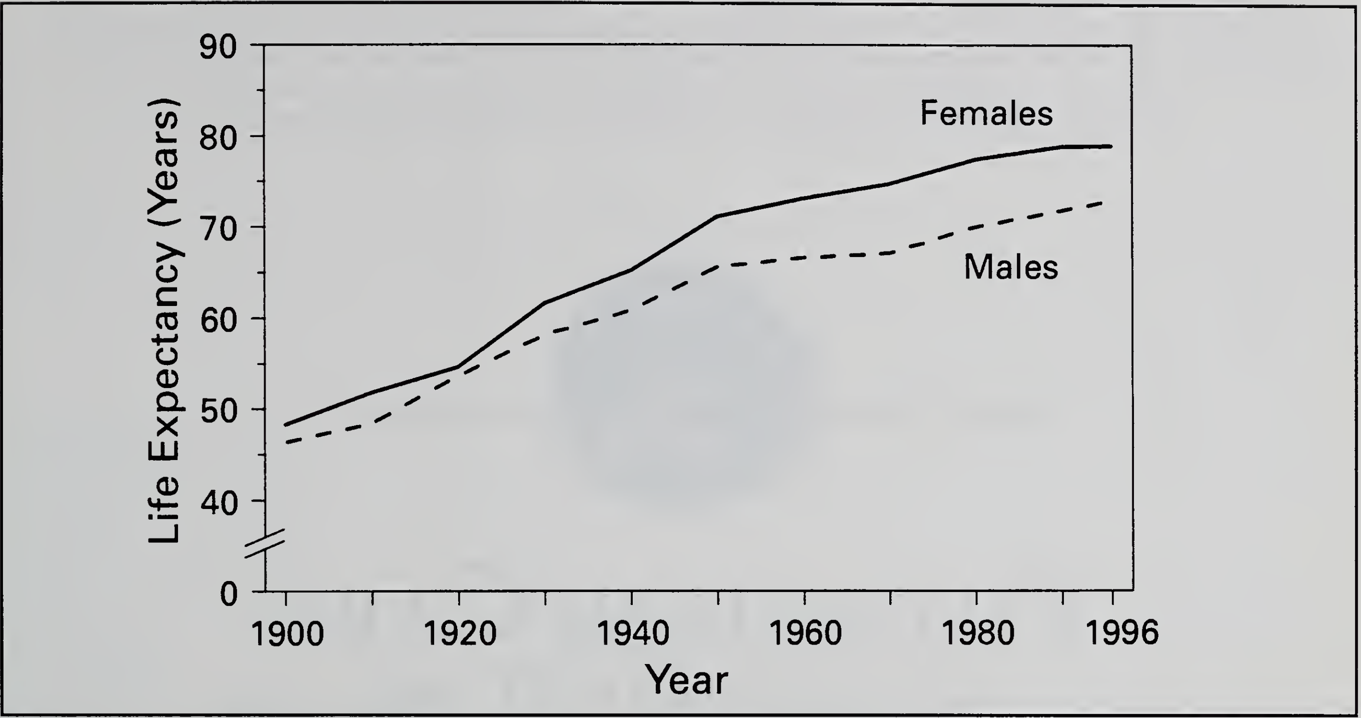

Figure 1.—Life expectancy at birth, by year of birth and sex—United States, 1900-1996.

The 1996 preliminary mortality data in this report were produced by a new system of vital statistics data preparation initiated in 1995. This system provides data that are nearly complete a year before the final data are released. Through an agreement with the state vital statistics offices, data are continually transmitted to NCHS. Preliminary data, although subject to revision, are particularly helpful for surveillance purposes and for gauging progress toward national health objectives for 2000.

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3. CDC: Update: Trends in AIDS incidence—United States, 1996. *MMWR* 1997; 46:861-7.

A registration statement relating to the securities of Physicians Care for Connecticut, Inc., has been filed with the Securities and Exchange Commission, but has not yet become effective. These securities may not be sold nor may offers to buy be accepted prior to the time the registration statement becomes effective. This notice shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of these securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under securities laws of such state.

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50 Years Ago

From *The Connecticut State Medical Journal*

November 1947

Where We Stand

The recently published report of the Commission on Hospital Care entitled *Hospital Care in the United States* summarizes the findings of an intensive two year survey of general hospitals. The material assembled by the commission and the recommendations make the report a valuable reference book for all those who are interested in hospital care, such as, administrators, trustees, physicians and nurses. The Commission on Hospital Care was established in 1944 by the American Hospital Association. In its list of members were representatives of hospital administration, medical and nursing education, universities, public health, the Grange, the American Federation of Labor and other groups. The purpose of the report is to act as a guide to the future development of hospital care and in this function it appears likely to be of inestimable service. Certain statistical data in the report is of pointed interest to Connecticut physicians particularly in its relation to other states. As an example we note that for the year 1944 the per capita income payment for all individuals in this country was $1,117. For Connecticut this figure was $1,509 only being surpassed by that of New York, $1,519. A table of further interest shows the relation of active physicians to population. For the entire United States in the year 1943 this was one physician to every 806 individuals. For Connecticut this figure was 736 and four states are lower, Illinois, Massachusetts, New York and Vermont. Similar figures for active registered nurses (1945) showed Connecticut one nurse for 323 individuals with no states lower than this. For classified nurses in Connecticut, one for 217 with Vermont one to 188.

The average size of hospital communities (1944) shows that Connecticut has 169 square miles per hospital community. Three states have less, Massachusetts 99, New Jersey 134, Rhode Island 132. Beds per 1,000 of population (1944) shows that Connecticut stands twelfth from the top with 3.96 beds, Montana being high with 6.25 and Massachusetts second with 5.33.

A study of full time personnel per patient day (1945) shows a figure of 1.68 for Connecticut exceeded by Delaware 1.81 and Rhode Island 2.04. The percentage of births in hospitals in 1943 was 72.1 for the United States. Connecticut heads this list with 97.3 per cent with Washington second at 96.3 per cent.

An interesting part of the report is concerned with the history of hospital care in this country. The voluntary hospital had its beginning in the Pennsylvania Hospital (1751). Later came the New York Hospital (1798), the Massachusetts General Hospital (1816) and the New Haven Hospital (1826).

From certain statistical points of view, therefore, our state is in a comparatively excellent position. However, this does not lessen our responsibilities or the need for careful consideration of our hospital care problems. The relatively high earning capacity of the people of our state forces a demand that they must be assured of adequate hospital care. This can be accomplished in part by insurance plans which should go forward as rapidly as possible. The part that the physician must play is obviously a crucial one.

Reprinted from the *Connecticut State Medical Journal*, November 1947.

Book Review: *Hospital Care in the United States,* Conn. State Med. Jour., Oct. 1947, page 880.

Spotting the Tuberculosis Individual

Almost since the discovery of the tubercle bacillus in 1882 vital statistics from the United States have shown a steady decline in the tuberculosis death rate. Fifty years ago this rate was 194 per 100,000 population. In 1910 the rate had dropped to 153.8 and in 1944 to 41.3. The vital statistics records of fifty years ago were arrived at in the presence of many inaccuracies in clinical diagnosis so that the high rate recorded for tuberculosis in that era may be questioned today. Postmortem records were few in number and the laboratory diagnosis of tuberculosis extremely crude.

Certain features of this problem as it now exists are disturbing. As pointed out by a pathologist in a recent issue of the *Bulletin* of *the National Tuberculosis Association,* tuberculosis is still the chief cause of death, except for accidents, in the fifteen to thirty-four years of age group, and also in recent years the tuberculosis death rate in old persons has shown an increase. The overall tuberculosis death rate in some of our possessions is likewise a cause for alarm, with Alaska recording a rate of 362.2 per 100,000 persons and Puerto Rico one of 215.

Many hospitals now are requiring routine chest roentgenograms of all admissions and have found many cases of tuberculosis in the hospital wards who enter for unrelated complaints. These patients may be in the hospital for long periods without their tuberculosis being discovered and thus present a source of infection to the nursing staff.

At the Meyer Memorial Hospital in Buffalo, New York, the most satisfactory method has been found to be the making of a set of 4 x 5 inch miniature chest radiograms on a 4 x l0 inch film. The standard 14 x 17 inch chest film was found to be too expensive and too difficult to process and handle and the 35 mm. film gave less accurate results.

It must be borne in mind, however, as pointed out by the pathologist referred to above, that a single roentgenogram of the chest can reveal only what is detectable at the moment and that the very early pathological process is never seen in an x-ray film. X-ray shadows cannot tell the exact condition of the tuberculosis process, whether it is really healed or not. It is only from repeated examinations that the stability and not the pathological healing can be determined.

A Pathologist Looks at TB, E. M. Medlar: Bull. Nat. Tb. Assoc., Jan. 1947.

Routine Chest Roentgenograms of Hospital Admissions, G. B. Scatchard and D. A. Duszynski: Dis. of Chest, XIII 4.

Dr. Alice Hamilton Honored

Alice Hamilton, M.D., seventy-eight, of Hadlyme, who has devoted her career to the prevention of occupational diseases, was presented with one of the seven Lasker Awards of the American Public Health Association at its seventy-fifth annual meeting held on October 9 in Atlantic City.

Given in recognition of her work as “an eminent medical scientist,” the award includes a citation, a gold statuette, and $1,000 in cash.

Born in New York City, Dr. Hamilton attended Miss Porter’s School, in Farmington, the University of Michigan, the University of Leipzig, the University of Munich, and Johns Hopkins University. Four other American universities have awarded her honorary degrees, and in 1942 the State Medical Society presented her with an honorary degree at its annual meeting of that year.

Teaching at the Northwestern University Medical School for Women, in Chicago, from 1897 to 1905, and pursuing research work in occupational diseases from 1905 to 1910, she later became a special investigator for the U. S. Department of Labor, from 1911 to 1921. Other teaching posts held by Dr. Hamilton included that of assistant professor of industrial medicine at Harvard Medical School. A member of the League of Nations Health Commission from 1924 to 1930, she has also been active in national health groups, and was engaged by the Department of Labor for several years prior to 1939 to investigate health dangers in the manufacture of viscose rayon. She is the author of numerous books, pamphlets, and magazine articles on occupational medicine.

THE PRESIDENT'S PAGE

Ethical Standards—Part Two

At times it may seem that the only constant is change. By the turn of the 20th century the American Medical Association, bearing its Code of Ethics, was indisputably the voice of medicine in the United States.

In the early 1900s, the AMA began to lose its monopoly voice not so much due to societal change but to fundamental change in the fabric of medicine itself. This first decade saw the advent of specialization and coincident with this the formation of specialty societies, boards, and colleges that seemed in many ways to express the interests of their members more succinctly than the AMA itself.

These organizations held themselves aloof from the AMA and general medicine with the result that the founding organization was forced to retreat from its principles of gratuitous care thus losing esteem in the public view.

A greater challenge arose with the advent of the scientific method and its application to medical research and the researcher. For a time the prevailing state of mind dismissed the Code as irrelevant to the new methods. The profession was simply unable to make the point that science itself was insufficient and that there existed a pressing need for an ethic to constrain it.

The rift in our profession grew to the point that initiatives were undertaken to abolish the Code entirely. Not until 1911 was the Code of Ethics generally accepted once more and the Council on Ethical and Judicial Affairs of the American Medical Association reconstituted.

The modern era begins with the tragedy of World War II and perhaps the most reprehensible chapter in the history of medicine with many of the leading scientists and researchers of the time on trial at Nuremberg for unspeakable crimes against humanity. These revelations and in the following two decades the lesser but no less significant incidents in the United States itself led to transformation and expansion of the original code into an entirely new field, that of bioethics. Here indeed was our new and desperately needed moral voice. A discipline nurtured in the United States at institutions such as the Hastings Center and Georgetown University and promulgated across the country and applied by many advocates to some of the most fundamental issues of life and health.

In the 1970s technological advances forced us to examine and redefine death; to grapple with access to limited technologies such as renal dialysis with all its ramifications; to address the issue of organ transplantation, and finally, the issues of expense in providing this technology to our population.

Indeed, bioethics in its modern form returns us to a moral foundation for our profession.

There arises the specter of managed care transforming medicine from a profession into a business. There exists the need to put forward the core values of integrity, fidelity, advocacy, and trust which are being corroded by emphasis on the so called "bottom line."

There are end-of-life care issues to be addressed. The perception that medicine has abandoned its terminal dying patients must be refuted.

The technological revolution in the field of genetics must be addressed. Cloning and its ramifications is a spectacular focal point for ethical and moral deliberation. Of more practical importance are the issues and opportunities afforded by a rapidly expanding armamentarium of genetic testing options. Therapeutic options seem limited at present but will grow. Meanwhile societal threats exist and must be addressed.

Challenges abound. Initial United States Supreme Court decisions now begin to establish precedent in law. It rests with us, nevertheless, to regain the moral high ground. Our profession demands it, absolutely.

Stanley J. Keating, Jr., M.D.
President

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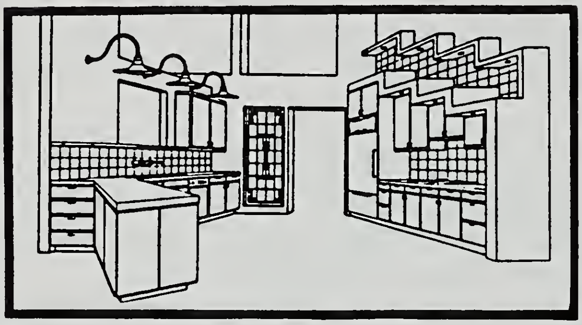

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REFLECTIONS ON MEDICINE

The Boomers Enter Life's Final Third

ROBERT U. MASSEY, M.D.

> The short period of life is long enough for living honorably—Cicero

HILLARY Rodham Clinton's entry into her sixth decade last month excited, or perhaps was only coincidentally joined to, a storm of journalistic activity around the apparently recently discovered matter of aging. The once iconoclastic Boomer generation, at least its senior ranks, are now being offered membership in AARP, that aggressive political outfit that wants to be sure that the young-old, old, and oldest-old get theirs at the expense of almost everyone else. The earliest Boomers sought to ignore their 50th birthdays during the past 23 months; by now a large crowd, they sense that the final third of their lives is underway, and they're uneasy about it. A fair number, mostly males, judging by what I see in the shopping mall, deny their advancing years by returning to their native 1960s—pony tails, earrings, scrubby, torn Levis, and messy beards, the works.

Science (17 October 1997) devoted all its Articles section to advances in aging research. The first feature in the *National Geographic* (November 1997) is "Aging: New Answers to Old Questions," and *Time* (27 October 1997) published a devastating article on criminally bad nursing homes, "Fatal Neglect," warning that the the nightmare could get worse. "Generally the nursing-home industry likes to settle lawsuits quietly and often hands over money only in exchange for silence." Many are "dangerous places largely because they are understaffed—and underregulated," and, *Time* might have added, have fallen into the deadly sin of greed, especially the for-profits. In care at both ends of life, the market works imperfectly, often adversely, and where profit is the goal, the conditions described by Dickens in mid-19th-century England find their analogous counterparts in late 20th-century America.

Appropriately both *Science*, especially in Lamberts et al: "The endocrinology of aging," and the *National Geographic,* emphasize the notion of successful aging, probably the usual way for most, in spite of the 1.6 million in nursing homes. That is a mere 5% of the 35 million of us over 65.

Last to arrive was *Academic Medicine* (October 1997) given over entirely to "Academic medicine and the issues of aging," the title of Editor Addeane S. Caelleigh's editorial. She warns that, faced with the "enormous group of older Americans" about to overwhelm our medical schools and teaching hospitals, "Academic medicine is not ready and in the present turmoil in U.S. health care, not likely to begin getting ready soon." Accompanying this issue of the journal was a supplement, "Medicine and the Arts: On Aging," with a fine collection of commentaries, both literary and pictorial, on humanity's "third age."

With the coming of scientific medicine in the 19th century, indeed, with the arrival of the notion of unlimited progress in human affairs, death came to be the ultimate disaster, the event against which all the forces of our technology must be directed. And, indeed, we gained mightily in this wrestling match with death. By the end of the twentieth century we in the West have pushed our life expectancy close to the limit of the human life span; by "we" I do not mean only those of us in medicine, but the whole technological and economic enterprise with its benign effect on our material standard of living. That we have failed to progress much in wisdom and the other virtues has barely begun to be noticed. Had that happened, I believe we would be ready to deal with death and dying without calling upon our academic medical centers to do that which they are so ill-equipped to do.

> Perhaps now, with all that is available to us to delay death—but not quite to make it optional—the most important task is to recover our humbleness before an awesome moment and *be* with the patient as one human being to another, knowing that we might be next, and that dying is not always open to solutions, as we tend to understand that term.[1]

Loving family and friends can do that, but they need to know that their physician is there available to help, standing with them, taking responsibility, not grudgingly, but as part of our willing obligation to honor the sacred covenant between us and each of our patients. That hardly requires a curriculum change but it may demand a "metanoia" something more robust than our modish religions of individualism and multiculturalism.

REFERENCE

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ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

M.D. Health Plan Supports Lyme Disease Foundation
NEW "Guide to Tick-Borne Disorders" Launched

M.D. Health Plan, Connecticut's second largest health maintenance organization (HMO) with over 189,000 members statewide, has collaborated with the Lyme Disease Foundation (LDF) on the production of a timely and informative booklet entitled a **"Guide to Tick-Borne Disorders."**

The guide, with an initial print run of 200,000, will be included in the upcoming issue of M.D. Health Plan's quarterly members magazine "Health Matters" and will also be circulated to physicians' practices for their patients use. Copies will be made available to employers and insurance brokers and will be included in all new healthcare contracts. M.D. Health Plan and the LDF have shared the cost of printing and mailing of the guides.

The Lyme Disease Foundation, a full member agency statewide of the Combined Health Appeal of Connecticut based in Hartford, is a national, non-profit organization dedicated to finding a solution to the growing Lyme disease epidemic. According to published actuarial studies there are as many as 20,000 new serious cases and 100,000 new less serious cases plus other tick-transmitted emerging diseases which can be severe including Babesiosis, Ehrlichiosis and Rocky Mountain Spotted Fever each year. Written by the Foundation, the **"Guide to Tick-Borne Disorders"** identifies various ticks, informs consumers how to recognize them, how to remove them, and how to protect against bites. Additionally, it advises on ways to reduce the tick population close to the home.

The Lyme Disease Foundation runs a 24-hour volunteer Hotline at 800-886-LYME. Additional guides are available from this number or (860) 525-2000 or by e-mail from <lymefnd@aol.com>. M.D. Health Plan, located at Crossroads Corporate Park, North Haven, is a subsidiary of Foundation Health Systems. Inc., the nation's fourth-largest publicly traded managed health care company.

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MEDICAL NEWS CAPSULES

This Month's Reading in Review

TIMOTHY B. NORBECK

In a survey published in late September the Harris Poll revealed that 54% of Americans believed the trend toward managed care is harmful for them, an increase from 43% a year earlier.... "There is definitely a trend toward accelerating levels of dissatisfaction," reported a Harris executive.... In another poll published in *Health Affairs*, 55% of 2,000 physicians surveyed said that the health care system was deteriorating overall and most sharply in communities with well entrenched managed-care organizations.

New York Times (27 September 1997)

"Midsize to large companies say that access/geographic coverage is the most important factor (72%) in evaluating health care coverage for employees. Other significant factors include: yearly cost/premium (67%), clinical quality of care (60%), financial strength/stability (49%) and reputation of the HMO's providers (40%)."

USA Today (4 August 1997)

A review of studies published over the last 10 years, including over 73,000 patients in various countries, indicates that the probability of a heart attack between 6 o'clock in the morning and noon is 40% higher than at other times of the day or night.... The analysis, which was performed by a team from Beth Israel Deaconess Medical Center in Boston, also showed that sudden cardiac deaths are 29% more likely before noon.

Physician's Weekly (28 April 1997)

According to the *Seattle Times*, private lawyers representing 40 states in lawsuits against the tobacco industry could reap more than "$14.7 billion over 25 years" if Congress and the White House approve the $368.5 billion global tobacco settlement negotiated between the states and cigarette makers.... Said David Kessler, former head of the FDA (and new dean of the Yale School of Medicine: "I don't think billions of dollars for lawyers are going to sit well with the American people. It certainly doesn't sit well with me."

Seattle Times (5 October 1997)

You forgot mileage!

The *Times of London* reported in March that when an employee of the James Beauchamp law firm in Edgbaston, England, recently killed himself, the firm billed his mother about $20,000 for the expense of settling his officework.... Included was a bill for about $2,300 to go to his home to find out why he didn't show up at work (thus finding the body), plus about $500 for identifying the body for the coroner, plus about $250 to go to his mother's home, knock on her door, and tell her that her son was dead.... (After unfavorable publicity, the firm withdrew the bill.)

Americans are living longer than ever, the infant mortality rate has reached an all-time low and the percentage of teenagers giving birth has declined for the fifth straight year.... The average American in 1996 could expect to live 76.1 years, up from 75.8 in 1995.... A analysis of the nation's vital statistics by the Centers for Disease Control and Prevention also revealed that the sex gap in life expectancy was narrowing; men increased their life expectancy by six months in 1996, to 73 years, while women increased theirs to 79 years from 78.9 years.

New York Times (12 September 1997)

The Top 10 Killers	Number of victims in the U.S.
Diseases of the heart	737,563
Cancer	538,455
Stroke	57,991
Chronic lung disease	102,899
Accidents	93,320
Pneumonia and flu	82,923
Diabetes	59,254
HIV infection	43,115
Suicide	31,284
Chronic liver disease and cirrhosis	25,222

Source: National Center for Health Statistics. Totals are for 1995, the latest year for which figures are available.

Parade (7 September 1997)

In 1993, the *Vancouver Sun*, a Canadian newspaper, ran an interesting medical observation.... Under the headline "United States Hospital Costs Are 40 Percent Higher Than in Canada," journalist Daniel Haney wrote: "Hospitals costs almost 40 percent more in the United States than in Canada, largely because ... the cases they treat are more complex. Dr. Donald Redelmeier, the Wellesley Hospital in Toronto, writing in the *New England Journal of Medicine*, said this reflects social differences between the two countries. 'Frostbite of the nose is not as expensive to treat as a shotgun wound to the belly,' he said."

Tribune (31 July 1997)

Only in America: Chris Steen filed a $55,000 lawsuit against the town of Ipswich, SD, in February after he fell on a sidewalk that had rough edges.... He claims the town failed to maintain the sidewalk in good condition, which is not an unusual claim except that Steen is the mayor of Ipswich.

News of the Weird (September 1997)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

In Response to Dr. Chotkowski's Letter

Letter to Editor: I found it outrageous that you chose to print the letter from L.A. Chotkowski, M.D. in your June 1997 (Letter to the Editor) column.

By saying he was already convinced that chiropractic was a "medical hoax," he admitted that he was visiting New York Chiropractic College with a completely closed mind and intentional antagonism.

What purpose does it serve to air the "opinions" of a man who not only is closed minded, but seems to revel in his intolerance? Wouldn't your readers and your profession be better served by exposure to opinions from those within your ranks who approach the topic of nonmedical health care from an unbiased opinion and possible self interest?

There are thousands of medical doctors around the country and the world who are opening their minds to the countless possibilities offered by nonmedical approaches to "health care," including nutrition, acupuncture and yes, Chiropractic.

These are true health professionals who are not driven by fear or hatred; but who have recognized the limits of their own understanding and want to learn as well as promote and teach. They are overcoming decades of AMA initiated antichiropractic propaganda and are now working very closely with chiropractors to provide a full range of health care services to their patients.

They are also coming to understand—as Dr. Chotkowski apparently does not—that chiropractic is not a "medical hoax" or even a "medical" treatment. In fact, it does not offer treatments, symptom relief, or cures. Its sole purpose is the totally nonmedical one of correcting vertebral subluxations (yes, Doc there is such a thing—just review the scientific literature within the past 20 years) to allow the human body to function better. It has been called the most conservative and, therefore, the safest of *all* health care approaches. Why does Dr. Chotkowski—or any medical doctor feel threatened by this? What does he or she have to lose, other than patients who leave his/her office with nothing more than a prescription?

Chiropractic has not grown to become the second largest health-care field in the world based on a giant "HOAX." It has grown and will continue to grow, because patients want one alternative to the often frustrating failure of "medical treatments" to safely and effectively help them achieve health and wellness.

If Dr. Chotkowski resents or fears its growth, then he should look at the weaknesses inherent in his own profession rather then trying to discredit or destroy the "competition."

Dr. Chotkowski also says he introduced a bill which would have banned the use of chiropractic on children and any manipulation of the neck, presumably because in his opinion (that has no factual basis) these practices pose some sort of "danger" to the public. Might I suggest that he research the literature on this issue and also read the medical literature on iatrogenic diseases and deaths which claim the health and lives of hundreds of thousands of people each year. What law will he introduce to put a stop to the tragedy?

Your publication has a responsibility to its readers and to the public they serve. Do not relinquish that responsibility by printing hate-mongering diatribes which clearly do not adhere to even the lowest standards of professional objectivity or journalistic ethics.

Luigi DiRubba, D.C. (Chiropractor)
Cheshire

Dr. Chotkowski Responds: Chiropractor Luigi DiRubba's letter reveals the dilemma in which chiropractic finds itself today, namely there is no scientific evidence for the chiropractic theory of a "subluxation" of a spinal vertebra pressing on a nerve that can be adjusted to treat or prevent disease.

In what appears to be an admission of this, the letter states, "In fact, it, (chiropractic), does not offer treatments, symptom relief, or cures." What apparently remains of chiropractic then is the claim that a theoretical adjustment of a vertebra can "achieve wellness." If this is not a "giant hoax," then at least it is a giant medical oxymoron.

As for chiropractor DiRubba's claim that chiropractic manipulation of the cervical spine is without danger, the 1994 *Consumer Reports* states that a prominent malpractice insurance company paid some 140 claims for chiropractic-induced strokes in one year. This alone should call for legislative consideration of a bill to ban licensure at least for cervical manipulation of adults, and a bill will be introduced again this year.

One issue avoided in his letter is the cost of chiropractic care. Based on 70,000 chiropractors in the U.S. today, the cost of chiropractors' and chiropractic assistants' incomes, office, radiology, and laboratory expenses of some 200 to

300 thousand dollars each, the total cost is about 14 to 21 billion dollars a year—a massive health-care cost for a scientifically unproven entity.

L.A. Chotkowski, M.D.
Kensington

Ethics in Managed Care

Letter to the Editor: Managed care is having a profound effect on medical ethics and the patient-physician relationship. Through an understanding of how to apply basic ethics principles to managed care participation, physicians may yet hold on to the basic ethic of the fiduciary doctor-patient relationship.

A common set of values is one of the primary unifying elements of any systematized group. The use of resource allocation mechanisms like managed care expand the needs of conscience with those of man-willed choice.[1,2] Historically the patient contracted with a physician to provide medical care. The physician had ethical and legal obligations to the patient. With the advent of managed care, an employer or the government, or at times the patient, purchases health care from an HMO, PPO, or other organization. These organizations then contract with the physician to provide that care. The physician has agreed to two obligations, one to the patient and one to the third party. At times these obligations are competing and possibly conflicting. The ethical and legal problems that arise from conflict between the bottom line and appropriate health care are difficult to resolve.[3]

Because managed care is here to stay, physicians and patients must learn to understand it and develop methods to work with it, preserving the overriding principle that the physician's first obligation is to be the patient's advocate.

Physicians must continue to practice good medicine, eliminate that which is unnecessary, and be conscious of the need to contain costs. If individual physicians embrace the ethical challenge of providing the best possible care for individual patients, within the limits of the resources available for the entire HMO population, the historical forms of micromanagement will not be needed. When patients understand that we have their interests at heart, and want to use the collective resources as judiciously as possible so that other members of the HMO can be well served, they will help us by indicating what is truly important to them and what is not.[4]

Now that more and more patients are receiving their care through HMOs, health plans are sharing the physician's ethical principles. Health plans are businesses with the ethical and legal responsibilities of health care providers. Health plans are seeking new ways to respond to ethical issues because they believe they owe it to their members and physicians.

The following five ethical principles are widely accepted in bioethics: autonomy, nonmaleficence, beneficence, justice-equity, promise keeping—truth telling.

With respect to autonomy, health plans and their physicians have a duty to respect the right of their members to make decisions about the course of their lives. Under the Hippocratic Oath, physicians are obligated to do no harm. Health plans have the same responsibility under the ethical principle of nonmaleficence. In terms of beneficence, each individual member should be treated in a manner that respects his or her own goals and values. At the same time, plans and their physicians also have a duty to promote the good of the members as a group.[5]

Under the ethical principle of justice-equity, health plans and their physicians should allocate resources in a way that fairly distributes benefits and financial burdens among the members. Finally, plans and their physicians have a duty to present information honestly and are obligated to honor commitments by virtue of the ethical principle of promise keeping—truth telling. These principles must be considered and weighted in the context of a particular decision. None of these principles is absolute.[5]

HMOs honor these ethical principles in many ways. Through ethics consultants, ombudsmen, and chaplains, many HMOs have integrated ethics into their corporate environment. Other plans have developed policies and procedures to provide guidance to physicians and members. The HMO grievance procedure is a method of honoring ethical principles in many plans. In plans of significant size and maturity HMOs have set up ethics committees. Typically, these committees aid plan administrators by providing a forum for the discussion of ethical issues, reviewing or generating policy statements, and educating staff in ethics. In addition, ethics committees may be available to physicians, patients, and their families for the discussion of conflicting clinical situations. This approach by consultation with an ethics committee may result in advice in difficult clinical situations. Ethics committees are multidisciplinary, and, therefore, have credibility with physicians and patients. A final option for HMOs is to bring ethical issues to local ethics centers for discussion.[5]

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Academia's Chilly Climate for Primary Care

Letter to the Editor: In spite of organized medicine's promotion of primary care as a central component of our health care delivery system, the acceptance of primary care especially in academic health care centers is not good.

This was the conclusion arrived at in "Academia's Chilly Climate for Primary Care" which appeared in the 4 September 1996 issue of *JAMA*. An excerpt from that article asserted that:

> Marketplace factors are encouraging AHCs [academic health centers] to recruit and affiliate with primary care physicians ... yet in spite of these changes, the values of traditional biomedicine and medical education continue to emphasize specialized knowledge and competence as opposed to breadth of knowledge; biological factors as opposed to social and emotional factors in health; and inpatient as opposed to outpatient care and training.

These conclusions and their ramifications are worth considering since academic health centers greatly influence the way we practice medicine. They not only set medicine's scientific standards but lay the foundations for its cultural values as well.

The point is that the standards and cultural attitudes toward medical practice that prevail in academic health centers are emulated by community hospitals where most primary care doctors practice. Thus it is important for the success of primary care as a distinct area of medical practice that our AHCs encourage and assist it as much as possible.

It is almost a truism that if our academic health centers support primary care enthusiastically and sincerely, it will encourage community hospitals—some of which still are indifferent towards primary care and primary care doctors—to do the same.

Doing so just might inspire our community hospitals to establish sections or even departments of primary care, giving it its fair place in the hospital's hierarchy of respectability. In many community hospitals general internists and family practitioners are still separate groups, jealously guarding their turfs, concentrating on the minor issues that divide them instead of the much greater common ground that connects them. With the right leadership sections of primary care would eliminate much of the needless tensions between family practice and general internal medicine.

This is still a unresolved problem and one which greatly retards the progress of health care delivery.

Yale and UCONN would do well to consider the potential value to our health care delivery system by encouraging the formation of sections of primary care in our community hospitals. They, more than any other group in organized medicine, have the authority and prestige to lead this type of change.

Perhaps sponsoring a symposium on this issue is an idea whose time has come.

Edward J. Volpintesta, M.D.
Bethel

From the Executive Director's Office

COUNCIL MEETING

Wednesday, 16 October 1997

Attendance

Present, in addition to the chairman, Dr. Joseph Sadowski, were Drs. Beck, Bigos, C. Czarsty, Deren, Eslami, Franklin, Geary, Herzog, Kamens, Katz, Keating, McDonnell, Maloney, Redmond, Scarpa, Sosa, Timmerman, Van Linda, Wetstone, and Wolfson.

Also present were: Drs. Ahamed, Hollister, Parke, Genel; Mr. Norbeck, Ms. Lindquist, Mr. Brunell, Ms. Morelli, Ms. Schaffman, Ms. Norbeck, and Mr. Staples (all CSMS staff), Mr. Thompson (FCMA staff), Ms. Debiase (HCMA staff), Ms. Snider (New London, Middlesex, and Windham Counties staff) and Atty. Greg Pepe.

Absent were: Drs. Bobruff, Brooks, J. Czarsty, Fischbein, Handelman, Lesnik, Montegut, Mushlin, Narayanan, Schwartz, Sindwani, Tesoro, Watson, Wesler, and Zeppieri.

Reports of Related Organizations

CSMS-IPA: Dr. David Thompson, Jr., president of the CSMS/IPA, was unable to attend the Council meeting and submitted a written report. The report recapped the information given at the last meeting that Foundation Health System, the parent company of M.D. Health Plan, has purchased Physician Health Services. There have been some procedural problems with the completion of the sale and the preparation of the prospectus that needs to be mailed prior to the consummation of the deal. The Executive Committee of the IPA has been charged with interviewing consulting firms with the intention to having expert help in evaluating and improving present operations. Several excellent candidates have been interviewed and a recommendation will be made to the Board of Directors at a meeting on 3 November. In addition to making recommendations for future undertakings, one main goal will be to integrate a new infrastructure into the organization. The rapid increase in size requires more full time oversight and they will be selecting an Executive Director and additional support staff to make the operation more effective.

Several questions were raised concerning the fiduciary responsibility of CSMS as the sole owner of the CSMS/IPA. Mr. Staples, CSMS legal counsel, commented that the IPA Board members may be covered under the CSMS Directors and Officers Insurance, but he would obtain further information as to the extent of that coverage and the legal responsibility of CSMS by the next Council meeting and since the next Council meeting will be in January Mr. Staples was requested to submit a report on this issue to the officers of CSMS.

CPRO: Dr. Kamens reported that some of the outreach programs that CPRO has undertaken have been completed and some of the data on these projects are beginning to show a great success in the state. CPRO relationship with Rhode Island has gone very smoothly because of the experience in Connecticut. All the hospitals in Rhode Island are on board. The R.I. commissioner of health has all the data and is on the R.I. PRO Board.

Connecticut Nurses' Association: Dr. Craig Czarsty, president-elect, informed the Council that he represented Dr. Keating at the meeting of the 91st Annual Meeting of the Connecticut Nurses' Association in Waterbury. He was given the opportunity to address the group and stated that he discussed the Advanced Practice Registered Nurses' Bill and that CSMS stands ready to meet with them at any time.

MD Advantage: (CSMS MSO) Dr. Deren reported that they're still in the process of meeting with many of the individual groups and the IPAs throughout the state and have been to Fairfield, Middlesex, and New London counties. He reported that Mr. James Darnell has moved here permanently and is now full time, visiting various counties as well as IPA groups.

Report of the President

Dr. Keating reported on his meeting with the Commissioner Stephen Harriman of the Department of Public Health and stated that he was impressed with the cordiality and respect he displayed dealing with the representatives of CSMS. At the end of the meeting the commissioner asked if CSMS would be interested in jointly sponsoring some public health education initiatives for the people in the State of Connecticut. Dr. Keating informed him that that CSMS would be happy to join him in such activities.

He further reported that following the signing of the Managed Care Bill, a meeting was held with the George Reider, Commissioner of Insurance, because the Insurance Department was given oversight responsibility as far as utilization and complaints are concerned. The commissioner was also very cordial and provided several of his staff members who will be involved in the managed care portion of the bill. He assured us that he would involve us in the committee dealing with oversight and that the commissioner stated that they were fully prepared to target offenders. Dr. Keating stated that he mentioned that CSMS publications could publish information on these issues. It was felt that the discussion of the managed care portion of the bill and utilization review went very well and that it was a positive meeting.

Report of the Executive Director

Mr. Norbeck reported on the following items:

Dr. Neil Brooks, CSMS alternate delegate to the AMA, was inaugurated on 20 September as the new national president of the American Academy of Family Physicians. Dr. Sultan Ahamed was elected to the nine member national PIAA Board (Physicians Insurance Association of America). Dr. Ahamed and Dr. Michael Deren were given the Distinguished Service Award by New London County and Dr. Edward Kamens received the award from Fairfield County.

The University of New Haven Symposium on Managed Care, which CSMS also sponsored, was very successful. Nancy Dickey, M.D., president-elect of the AMA was the keynote speaker and made a great presentation. Dr. Nuland also participated and gave a most compelling speech. Mr. Norbeck stated that he had the pleasure of being on a panel with New Haven State Senator Toni Harp. It was interesting to note that Senator Harp put down as the first item on her biographical sketch that was used to introduce her, that she was a recipient of the CSMS Distinguished Service Award.

PAC membership has been slipping, which is hard to understand, taking into consideration the many successes that CSMS achieved last year in the legislature. Because of these accomplishments it was felt that membership should be greatly improved.

Cam Staples and he spoke to the medical students at the University of Connecticut Health Center on 6 October. About 90 minutes was spent with them and the following items were discussed: CSMS and its history, managed care reform, CMIC, and legislative issues. The response of the students was very favorable.

Three HMOs, Kaiser, Health Cooperative of Puget Sound, and Health Insurance Plan, joined with AARP and Families USA to sign on to an agreement for consumer protection standards in managed care. The standards include choice of health plans, (right now one-half of nation's employees have no choice), physician involvement in development of drug formularies, quality assurance, prohibitions against discrimination, coverage of emergency care, disclosure of the medical loss ratio, and other patient-friendly items. He stated that this bodes well for further managed care reform.

House Speaker Newt Gingrich expressed his intention to appoint the AARP executive director, Horace Deets, to the new bipartisan commission charged with coming up with long-term reform for the Medicare program. Inasmuch as Mr. Deets is wedded to the status quo on entitlements, it seems to be a foolish move and an obvious political one. The *Wall Street Journal* has come out against the appointment, and hopefully others will complain about it and cause the speaker to forget the idea.

Report on Connecticut Medical Insurance Company (CMIC)

As is customary, prior to each House of Delegates meeting, a report is made on CMIC. Sultan Ahamed, M.D., president and chairman of the board, reported that CMIC Board of Directors declared its seventh consecutive and largest policy holder dividend of $2.5 million. The dividend will be applied as a premium credit to members at renewal on 1 January 1998. The policyholder dividends are based on review of prior years' loss experience and represents funds not needed to pay claims or strengthen the company's financial structure. Combined policyholder repayments now total $20 million. The most important function next year will be changes in the risk classes and their premium structure. Members in some risk classes will see a modest rate increase, others will have their risk class reduced and some members will see no change at all.

In addition, the 1997 Risk Management course, if successfully completed, allows members to earn a 5% premium credit at renewal and 5 Category 1 CME credits.

Legislative Report

Dr. Parke Chair of CSMS Committee on Legislation, reported on the following:

The October issue of the *CSMS Action Newsletter* will contain a removable booklet that explains the managed care bill with a consumer complaint form and a handout that can be copied and left in the waiting room for patients. This issue was mailed to all physicians and the complaint form will be printed in *Connecticut Medicine* on a monthly basis. Several physicians are participating in working groups organized by various state legislative committees during the off session.

CSMS is co-sponsoring an event on 6 November with the Yale School of Medicine to which legislators will be invited to spend a morning in medical school. It is hoped to raise the legislators' awareness of the depth and rigors of a medical school education. A similar event with University of Connecticut School of Medicine may be held in the spring, focusing on graduate medical education.

The Legislative Committee will hold three meetings in November to take on the issues expected to arise in the next session. The two biggest issues will be APRNs and physician profiling. The Medical Examining Board is expected to rule on the use of lasers for hair removal before the end of the year. CSMS presented testimony that this practice is considered to be the practice of medicine.

CSMS 1997 legislative awards will be presented at a COMPAC meeting which will be held on 12 November, the day of the CSMS House of Delegates, at the Ramada Inn in Meriden.

On the federal level, CSMS has been supporting the AMA's efforts to pass the Medicare Beneficiary Freedom to Contract Act, better known as the Kyl-Archer bill, and so far only Representatives Johnson and Shays have signed on as co-sponsors. This is the bill that would allow a physician to establish private contracts with individual Medicare recipients without withdrawing from the Medicare program completely. Connecticut is also assisting AMA in supporting the appointment of Drs. Nancy Dickey and Stormy Johnson to the Medicare Commission. At our request, Senator Lieberman has signed onto a Senate Resolution honoring the AMA's 150th anniversary.

Principles of Cooperation in Medical-Legal Matters

Drs. Williams and Walzer, who also have JD degrees and who served on the CSMS Liaison Committee with the Bar Association, which committee formulated these "Principles", joined the Council to respond to any questions raised. The committee was chaired by Dr. Sadowski, who also responded to questions. Following discussion, it was VOTED to approve the "Principles of Cooperation in Medical-Legal Matters" as presented. During the discussion, it was suggested that perhaps the "Principles" should be jointly published and distributed and perhaps a seminar on the subject could also be jointly sponsored.

Report of Fiscal Subcommittee

The Council took the following action on the report of the Fiscal Subcommittee:

VOTED to approve the budget for 1998, as presented by the Fiscal Subcommittee, and transmit the budget to the House of Delegates on November 12 with the Council's recommendation that the budget be approved and that the CSMS dues remain at $390.

VOTED to approve a capital budget for 1998 in the amount of $17,755.

VOTED to approve a Physicians' Health and Education Fund budget for 1998 in the amount of $39,000.

Report on Meeting of Maine Medical Association

Dr. Anthony Redmond submitted a written report on his attendance at the subject meeting. He reported that he addressed their House of Delegates for ten minutes and believes they were impressed with the CSMS managed care bill which seem to them to set a national standard. They hopefully will take the necessary steps to follow up on this in the coming year. There are only 1,000 physicians in Maine and a few large hospitals with smaller cottage-hospitals. Maine was able to pass three managed care bills, one which ensured the protection of the providers who were terminated by a health plan; another ensured reasonable access to emergency medical services; and a third ensured patient's choice and that they would be offered a healthcare plan with point-of-service option.

He reported that Nancy Dickey, M.D., president-elect of the AMA, attended the last two days of the meeting and that it was a very interesting meeting.

Statement of Collaborative Intent

At the 1997 Annual Meeting of the AMA, the House of Delegates adopted a "Statement of Collaborative Intent" to guide the development of better working relationships among medical societies and are requesting state societies to also adopt this "Statement." This action builds on the earlier work of the Study of the Federation and establishes a strong basis for the future of the Federation of Medicine. The goals of the Federation of Medicine are to achieve a unified voice for organized medicine, work for the common good of all patients and physicians; promote trust and cooperation among members of the Federation, advance the image of the medical profession, and increase overall efficiency of organized medicine for the benefit of member physicians. It was VOTED to adopt the "Statement of Collaborative Intent."

Dates of Future Meetings

Council Meeting: Thursday, 22 January1998

COMMITTEE SERVICE QUESTIONNAIRE

Connecticut State Medical Society

Early in 1998 the Councilors from the eight constituent county medical associations will assume the responsibility of selecting members of the Society to participate in the various activities of the Society, listed below. In making these selections it is of importance to choose physicians who are not only willing and able to serve but also who are known to have an interest in the work of the group to which they may be assigned. In order to enable this office to furnish the Councilors with a compilation of those who desire to be considered for committee service, members are asked to indicate by number in order of preference (not more than three) opposite your choice in the questionnaire below and return same to the:

Executive Director's Office
160 St. Ronan Street
New Haven, CT 06511

Your cooperation will be appreciated.

Medical Education

★ Committee on Continuing Medical Education

Medical Economics

★ Committee on Insurance
★ Committee on Workers' Compensation

Professional Relations

★ Committee on Ethical and Judicial Affairs

Public Affairs and Communication

★ Editorial Committee on *Connecticut Medicine*
★ Committee on Legislation
★ Committee on Public Affairs

Scientific and Socio-environmental Medicine

★ Cancer Coordinating Committee
★ Committee on Physician Health
★ Committee on Maternal Morbidity and Mortality
★ Committee on Medical Aspects of Sports
★ Committee on Organ and Tissue Transfers
★ Committee to Study Perinatal Morbidity and Mortality
★ Committee on Public Health
★ Committee on Statewide Medical Planning
★ Committee on Geriatrics
★ Committee on Medicare
★ Committee on Data Study
★ Committee on Allied Health Services
★ Committee on Alcohol and Other Drug Dependency Education

Representative and Advisors

★ Representatives to Connecticut Advisory Council on School Health
★ Delegates to Connecticut Public Health Association, Inc.
★ Delegates to Connecticut Nutrition Council

Please return by January 15, 1998

Name: ________________________________ M.D.
(Please Print)

Office Address: ________________________________

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IN MEMORIAM

CASTAGNO, MARION, Boston University School of Medicine, 1943. Dr. Castagno practiced ophthalmology in Brooklyn and headed the Eye Clinic at the Metropolitan Insurance Company for several years before moving to Hartford in 1949. She remained in practice in Hartford until her retirement in 1997. Dr. Castagno was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Castagno died 19 August 1997 at the age of 80.

EILBERGAS, MICHAEL, Medizinische Fakultät der Universität Zurich, Switzerland, 1941. Dr. Eilbergas practiced medicine in Windsor Locks where he served as the town's medical examiner. He served as chief of medical services for the Windsor Locks Polio Clinic during the 1950s. In 1973 he served as health officer for the towns of East Windsor and South Windsor. Dr. Eilbergas was a member of the Hartford County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Eilbergas died 29 September 1997 at the age of 83.

HALEY, JOHN C., Yale University School of Medicine, 1940. Dr. Haley practiced obstetrics and gynecology in the Hamden and New Haven from 1949 until his retirement in 1991. He also had also been a clinical instructor at Yale School of Medicine. Dr. Haley was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Haley died 14 September 1997 at the age of 83.

HANLEY, J. BAINBRIDGE, Jefferson Medical College of Thomas Jefferson University, 1939. Dr. Hanley, an internist, maintained a private practice in Bristol until his retirement in 1985. He was a member of the Hartford County Medical Association and the Connecticut State Medical Society. Dr. Hanley died 10 August 1997 at the age of 84.

KROSNICK, GERALD, Jefferson Medical College of Thomas Jefferson University, 1938. Dr. Krosnick practiced obstetrics and gynecology in New Haven for 48 years, retiring in 1996. He served on the medical staff of Yale-New Haven Hospital and the Hospital of St. Raphael and was an associate clinical professor of obstetrics and gynecology at Yale School of Medicine. Dr. Krosnick was a member of the New Haven County Medical Association, the Connecticut State Medical Society, and the American Medical Association. Dr. Krosnick died 3 September 1997 at the age of 85.

MAYO, ELLIOT R., Tufts University School of Medicine, 1938. Dr. Mayo was a practicing physician and surgeon in Waterbury for more than 50 years and was affiliated with both St. Mary's and Waterbury Hospitals. He served as the medical director of the Chesprocott Health District. Dr. Mayo was a past president of the Waterbury Medical Association and was a member of the New Haven County Medical Association where he served as a delegate to the Connecticut State Medical Society for 10 years, the Connecticut State Medical Society where he was active on conference committees with the Connecticut Pharmacy Association from 1967 to 1974, and the American Medical Association. Dr. Mayo died 24 August 1997 at the age of 87.

Why Should Chickenpox be Prevented? Is the Chickenpox Vaccine Safe and Effective?

The answers to these and other commonly asked questions are featured in "The Chickenpox Vaccine: Answers to Parents' Questions," a booklet available free of change from the VZV Research Foundation. The Foundation is the world's only nonprofit organization dedicated to fighting the varicella-zoster virus (VZV) and the diseases is causes—chickenpox, shingles, and post-herpetic neuralgia (PHN).

Chickenpox is typically regarded as a mild childhood illness. But it can be serious. Each year, chickenpox complications result in the hospitalization of about 9,000 otherwise healthy people, 80% of them children. In addition, 100 people with chickenpox die annually, appoximately half of whom were otherwise healthy.

Free copies of this booklet are available by sending a stamped (two first-class stamps), self-addressed, business-size (#10) envelope, to the following address: Chickenpox Brochure, VZV Research Foundation, Dept. BN, 40 East 72nd Street, New York, NY 10021.

For more information on VZV disease, readers can call the Information Line at 1-800-472-VIRUS (1-800-472-8478).

Consumer Concern Or Complaint Form
Regarding Group Or Individual Health Insurance
Including Managed Care Plans

To Be Submitted To
THE CONNECTICUT DEPARTMENT OF INSURANCE
CONSUMER AFFAIRS DIVISION
P.O. BOX 816
HARTFORD, CT 06142-0816

Phone: (860) 297-3900 or 1-800-203-3447 Fax: (860) 297-3872

The Consumer Affairs Division of the Department of Insurance receives, reviews and responds to complaints and inquiries from state residents concerning insurance related problems. The staff examines each complaint to determine whether statutory requirements and contractual obligations within the commissioner's jurisdiction have been fulfilled. The Consumer Affairs Division coordinates the resources available within the Department to address consumer complaints.

In order for the Division to pursue a formal review of a concern or complaint, the consumer must submit a written explanation to the address listed above with as much pertinent detail as possible. Each written submission to the Consumer Affairs Division will be acknowledged.

Name of person filing the concern or complaint:

____

Address: ________________________________

Phone where the Department can contact you: (_____) __________________

This concern or complaint concerns the following Insurance Company or Managed Care Plan: ____________________
Policy Number: ____________________
Name of Policyholder: ____________________
Name of Enrollee: ____________________
Name of Patient: ____________________
Patient is ___ **self** ___ **dependent** ___**other** (explain)____________________

The following is a detailed description of the concern or complaint:

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CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

OPPORTUNITIES FOR PRACTICE

DERMATOLOGY

Busy practice in southeastern Connecticut seeking to expand. Looking for well trained, surgically oriented, hardworking BC/BE dermatologist. Call (860) 445-8020 or fax CV to (860) 445-1665.

INTERNAL MEDICINE

Chief Resident, Internal Medicine—Griffin Hospital, a major affiliate of Yale University School of Medicine. Excellent opportunity for academically-oriented individual, minimum requirement three years internal medicine residency, ABIM certification preferred. Title of Clinical Instructor in Medicine at Yale given. Send CV to: Dr. Vincent A. DeLuca, Jr., Chairman, Department of Medical Education & Student Affairs, The Griffin Hospital, Derby, CT 06418.

MEDICAL DIRECTOR—OCCUPATIONAL MEDICINE

Excellent opportunity for a BE/BC IM, GP, ER, OM, or GS to join this rapidly growing Occupational Medicine practice that is completing its Connecticut expansion. Clinical or administrative responsibilities and experience in Connecticut worker's compensation, ADA, and soft tissue injury management required. Extremely competitive salary, bonus and benefits package offered. For more information, send CV to the attention of Susan Henry, Industrial Health Care Company, 1095 Day Hill Rd., Windsor, CT 06095.

PEDIATRICIAN

BC/BE Pediatrician to replace retiring member of group in July 1998. University affiliation, suburban practice in south central Connecticut. Competitive salary and benefits. Contact Dr. L. DiMauro, 420 S. Main St., Cheshire, CT 06410, telephone (203) 272-0396.

Collins Medical Associates, P.C., a primary care group practice affiliated with St. Francis Hospital and Medical Center, is looking to fill three pediatric positions. The first requires a BC pediatrician with an entrepreneurial flair to transition a retiring pediatric practice in Manchester. The second position is with a well-established female pediatrician in West Hartford who is seeking an associate. The third position is with a two-man, well-established, active practice in Bloomfield. All positions have a competitive compensation and benefits package and attractive call schedule. If you are interested in any of these opportunities please call Christine Fucci at 800-892-3846 or fax your CV to (860) 585-3525.

PRIMARY CARE

HealthFirst, a growing regional community health center with three sites in eastern Connecticut seeks BC/BE FP/IM to provide full range of preventive and primary care. All sites are fully staffed, computerized and integrated into an organizational network. Competitive salary and benefits. For more information call or send CV to: Recruitment Manager, 112 Lafayette St., Norwich, CT 06360, telephone (860) 885-1308, fax (860) 889-1982.

RADIOLOGY

Radiologist wanted, part-time, approximately three days per week, starting January 1998. Some flexibility desired. Busy outpatient office. No angiography or night call. For information please contact Kenneth Bird, M.D. at (860) 344-6293.

PHYSICIANS WISHING TO PRACTICE IN THE STATE OF CONNECTICUT

INTERNAL MEDICINE

Available Immediately. Licensed in Connecticut. Passed National Boards. American Board certified. M.D. at Tufts University School of Medicine. Internship and residency at the Hospital of St. Raphael. Office based general internist with extensive managed care experience, seeking to join a group or associates practice. Please respond to: Michael F. Collins, M.D., 53 Cotswold Close, Glastonbury, CT 06033. Telephone (860) 633-5698.

PART-TIME

Available immediately. Licensed in Connecticut. Board certified in internal medicine, hematology and oncology. M.D. at the University of Vermont. Internal medicine residency at West Virginia University. Hematology/oncology fellowship at the University of Minnesota. Seeking a part-time position in a solo or group practice within commuting distance of Hartford. Please respond to: Susan F. Burroughs, M.D., 7 Butternut Lane, Simsbury, CT 06089, telephone (860) 651-3941.

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All PAID classified advertising orders, correspondence, and payments should be directed to: CONNECTICUT MEDICINE, Classified Department, 160 St. Ronan Street, New Haven, CT 06511, Tel. (203) 865-0587. The Classified rates are as follows: $60.00 for 25 words or less; plus $1.00 each additional word. For confidential answers, the cost is $3.00 per insertion, sent in care of CONNECTICUT MEDICINE. Ad copy must be typewritten, double spaced, with payment, and delivered no later than the first day of the month preceding the month of issue.

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Colonoscope for sale because of physician's death. Pentax Model #FC38LX. It is in excellent condition. Bought new in 1991. Asking $5,000. Please call (860) 399-7008.

PRACTICE FOR SALE

Internal medicine practice and office. Prime location, close to hospitals and highways. Also suitable for other specialties. Great potential for growth and expansion. Inquiries: Tel/fax: (203) 239-4147.

Information for Authors

Manuscripts

Manuscripts should be submitted to: **Robert U. Massey, M.D., Editor, *Connecticut Medicine,*** 160 St. Ronan St., New Haven, CT 06511 The manuscripts submitted should include, **an original, one duplicate copy, and a 3½" (5¼") diskette** (all popular computer wordprocessing languages are acceptable—if unsure call the *Journal* office). The author should retain another copy for his records. A covering letter should identify the person (with the address and telephone number) responsible for negotiations concerning the manuscript; the letter should make it clear that the final manuscript has been seen and approved by the authors.

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Copy must be double-spaced on (8½x11") white bond paper. The manuscripts submitted should include, **an original, one duplicate copy, and a 3½" (5¼") diskette** (all popular computer wordprocessing languages are acceptable—if unsure call the *Journal* office). This requirement applies to all text elements: references, legends, footnotes, and others. Pages should be numbered. Authors should generally follow *JAMA* style, or consult *Manual for Authors & Editors,* Eighth Edition, 1989, compiled for the AMA and published by Williams & Wilkins.

Titles and Author's Names

The first page of the manuscript should include (1) title of paper; (titles should be short, specific, clear, and amenable to indexing; (2) name of author(s), including first name(s) and academic degree(s); (3) List hospital positions for each author and any institutional or other credits. If an author's present affiliation is different from the affiliation under which the work was done, both should be given. Include academic appointments when applicable.

Units of Measurement

Measurements may be expressed in Système International (SI) units, but include older conventional units in parentheses if desired. Use Celsius for temperature.

Abstracts

The second page should contain an abstract of not more than 150 words. This abstract should be factual, not descriptive, and should present the reason for the study, the main findings (give specific data if possible), and the principal conclusion. Do not include a summary.

References

The following minimum data should be typed double-spaced: names of all authors, complete title of the article cited, name of journal abbreviated according to *Index Medicus,* year of publication, volume number, and first and last page numbers. All references must be cited in the text. They should be arranged according to the order of citation, and not alphabetically. All references must be numbered consecutively. Numbered references to personal communications, unpublished data, and "in preparation" are unacceptable. If absolutely essential, such material may be incorporated in the appropriate place in the text or as a footnote. Sample references are as follows:

1. Jones J: Necrotizing *Candida* esophagitis. *JAMA* 1980; 244:2190-1.
2. Kremer H, Kellner E, Schierl W, et al: Ultrasonic diagnosis in infiltrative gastrointestinal diseases. *Dtsch Med Wochenschr* 1978; 103:965-6. Abstracted, *JAMA* 1978; 240:2784.
3. Influenza vaccine—recommendations of the Public Health Service Advisory Committee on Immunization Practices. *MMWR* 1979; 28:231-8.
4. Fischer DH: *Growing Old in America.* New York, Oxford University Press, 1977, pp 210-6.

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Data presented in tables should be self-explanatory and should supplement, not duplicate, the text or figures. Excessive tabular data are discouraged. Each table should be typed double-spaced, including all headings, on separate sheets of 8½x11" paper. Oversize papers should not be used. Instead, repeat heads and stubs on a second sheet for tables requiring extra width. Number tables consecutively with respect to citation in the text. Each table must have a title.

Illustrations

Figures should be professionally drawn and photographed, if possible. Glossy, clear black and white photographs should be submitted.

Line drawings, graphs, and charts should be done in India ink on high-grade white drawing paper. Lines should be examined for evenness, breaks, and proper alignment. Lettering and symbols should be clear and of even density throughout. Computerized drawings, graphs, and charts should be printed by a 300 dpi printer if available (submit on a diskette for publication). Symbols, lettering, and numbering should be of such proportioned size that when the figure is reduced to *Journal* column width (8 cm) each item will be distinctly recognizable.

Do not send original artwork or black and white negatives.

Each figure should have a label pasted on its back indicating the figure's number, the names of the authors, and the top of the figure. Do not mount the figure on cardboard. Do not write on the backs of figures, nor expose them to paper clips.

If photographs of patients are used, either the subjects should not be identifiable, or their pictures must be accompanied by written permission to use the figure.

Legends for illustrations should be typewritten (double spaced) on a separate sheet with numbers corresponding to the figures.

Drug Names

Generic names should be used. If an author so desires, brand names may be inserted parenthetically.

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Review and Action

All manuscripts are subject to review by referees in appropriate fields of medicine. Authors are usually notified within three to six weeks as to the acceptability of a manuscript, but sometimes longer delays are unavoidable.

BRIEF SUMMARY

ZYBAN™ (bupropion hydrochloride)

Sustained-Release Tablets

The following is a brief summary only; see full prescribing information for complete product information.

CONTRAINDICATIONS: ZYBAN is contraindicated in patients with a seizure disorder.

ZYBAN is contraindicated in patients treated with WELLBUTRIN® (bupropion hydrochloride) Tablets, WELLBUTRIN SR® (bupropion hydrochloride) Sustained-Release Tablets, or any other medications that contain bupropion because the incidence of seizure is dose dependent.

ZYBAN is contraindicated in patients with a current or prior diagnosis of bulimia or anorexia nervosa because of a higher incidence of seizures noted in patients treated for bulimia with the immediate-release formulation of bupropion.

The concurrent administration of ZYBAN and a monoamine oxidase (MAO) inhibitor is contraindicated. At least 14 days should elapse between discontinuation of an MAO inhibitor and initiation of treatment with ZYBAN.

ZYBAN is contraindicated in patients who have shown an allergic response to bupropion or the other ingredients that make up ZYBAN.

WARNINGS: Patients should be made aware that ZYBAN contains the same active ingredient found in WELLBUTRIN and WELLBUTRIN SR used to treat depression, and that ZYBAN should not be used in combination with WELLBUTRIN, WELLBUTRIN SR, or any other medications that contain bupropion.

Because the use of bupropion is associated with a dose-dependent risk of seizures, *clinicians should not prescribe doses over 300 mg/day for smoking cessation.* The risk of seizures is also related to patient factors, clinical situation, and concurrent medications, which must be considered in selection of patients for therapy with ZYBAN.

- **Dose: *For smoking cessation, doses above 300 mg/day should not be used.* The seizure rate associated with doses of sustained-release bupropion up to 300 mg/day is approximately 0.1% (1/1,000). This incidence was prospectively determined during an 8-week treatment exposure in approximately 3,100 depressed patients. Data for the immediate-release formulation of bupropion revealed a seizure incidence of approximately 0.4% (4/1,000) in depressed patients treated at doses in a range of 300 to 450 mg/day. In addition, the estimated seizure incidence increases almost tenfold between 450 and 600 mg/day.**
- **Patient factors: Predisposing factors that may increase the risk of seizure with bupropion use include history of head trauma or prior seizure, central nervous system (CNS) tumor, and concomitant medications that lower seizure threshold.**
- **Clinical situations: Circumstances associated with an increased seizure risk include, among others, excessive use of alcohol; abrupt withdrawal from alcohol or other sedatives; addiction to opiates, cocaine, or stimulants; use of over-the-counter stimulants and anorectics; and diabetes treated with oral hypoglycemics or insulin.**
- **Concomitant medications: Many medications (e.g., antipsychotics, antidepressants, theophylline, systemic steroids) and treatment regimens (e.g., abrupt discontinuation of benzodiazepines) are known to lower seizure threshold.**

Recommendations for Reducing the Risk of Seizure: Retrospective analysis of clinical experience gained during the development of bupropion suggests that the risk of seizure may be minimized if

- **the total daily dose of ZYBAN does *not* exceed 300 mg (the maximum recommended dose for smoking cessation), and**
- **the recommended daily dose for most patients (300 mg/day) is administered in divided doses (150 mg twice daily).**
- **No single dose should exceed 150 mg to avoid high peak concentrations of bupropion and/or its metabolites.**
- **ZYBAN should be administered with extreme caution to patients with a history of seizure, cranial trauma, or other predisposition(s) toward seizure, or patients treated with other agents (e.g., antipsychotics, antidepressants, theophylline, systemic steroids, etc.) or treatment regimens (e.g., abrupt discontinuation of a benzodiazepine) that lower seizure threshold.**

Potential for Hepatotoxicity: In rats receiving large doses of bupropion chronically, there was an increase in incidence of hepatic hyperplastic nodules and hepatocellular hypertrophy. In dogs receiving large doses of bupropion chronically, various histologic changes were seen in the liver, and laboratory tests suggesting mild hepatocellular injury were noted.

PRECAUTIONS:

General: ***Allergic Reactions:*** Anaphylactoid reactions characterized by symptoms such as pruritus, urticaria, angioedema, and dyspnea requiring medical treatment have been reported at a rate of about 1-3 per thousand in clinical trials of ZYBAN. In addition, there have been rare spontaneous postmarketing reports of erythema multiforme, Stevens-Johnson syndrome, and anaphylactic shock associated with bupropion.

Insomnia: In the dose-response smoking cessation trial, 29% of patients treated with 150 mg/day of ZYBAN and 35% of patients treated with 300 mg/day of ZYBAN experienced insomnia, compared to 21% of placebo-treated patients. Symptoms were sufficiently severe to require discontinuation of treatment in 0.6% of patients treated with ZYBAN and none of the patients treated with placebo.

In the comparative trial, 40% of the patients treated with 300 mg/day of ZYBAN, 28% of the patients treated with 21 mg/day of HABITROL® (nicotine transdermal system) (NTS), and 45% of the patients treated with the combination of ZYBAN and NTS experienced insomnia compared to 18% of placebo-treated patients. Symptoms were sufficiently severe to require discontinuation of treatment in 0.8% of patients treated with ZYBAN and none of the patients in the other three treatment groups.

Insomnia may be minimized by avoiding bedtime doses and, if necessary, reduction in dose.

Psychosis, Confusion, and Other Neuropsychiatric Phenomena: In clinical trials with ZYBAN conducted in nondepressed smokers, the incidence of neuropsychiatric side effects was generally comparable to placebo. Depressed patients treated with bupropion in depression trials have been reported to show a variety of neuropsychiatric signs and symptoms including delusions, hallucinations, psychosis, concentration disturbance, paranoia, and confusion. In some cases, these symptoms abated upon dose reduction and/or withdrawal of treatment.

Activation of Psychosis and/or Mania: Antidepressants can precipitate manic episodes in bipolar disorder patients during the depressed phase of their illness and may activate latent psychosis in other susceptible individuals. The sustained-release formulation of bupropion is expected to pose similar risks. There were no reports of activation of psychosis or mania in clinical trials with ZYBAN™ conducted in nondepressed smokers.

Use in Patients With Systemic Illness: There is no clinical experience establishing the safety of ZYBAN in patients with a recent history of myocardial infarction or unstable heart disease. Therefore, care should be exercised if it is used in these groups. Bupropion was well tolerated in depressed patients who had previously developed orthostatic hypotension while receiving tricyclic antidepressants, and was generally well tolerated in a group of 36 depressed inpatients with stable congestive heart failure (CHF). However, bupropion was associated with a rise in supine blood pressure in the study of patients with CHF, resulting in discontinuation of treatment in two patients for exacerbation of baseline hypertension.

In the comparative trial, 6.1% of patients treated with the combination of ZYBAN and NTS had treatment-emergent hypertension compared to 2.5%, 1.6%, and 3.1% of patients treated with ZYBAN, NTS, and placebo, respectively. The majority of these patients had evidence of preexisting hypertension. Three patients (1.2%) treated with the combination of ZYBAN and NTS and one patient (0.4%) treated with NTS had study medication discontinued due to hypertension compared to none of the patients treated with ZYBAN or placebo. Monitoring for treatment-emergent hypertension is recommended in patients receiving the combination of ZYBAN and NTS.

Because bupropion hydrochloride and its metabolites are almost completely excreted through the kidney and metabolites are likely to undergo conjugation in the liver prior to urinary excretion, treatment of patients with renal or hepatic impairment should be initiated at reduced dosage as bupropion and its metabolites may accumulate in such patients to a greater extent than usual. The patient should be closely monitored for possible toxic effects of elevated blood and tissue levels of drug and metabolites.

Information for Patients: See PATIENT INFORMATION at the end of the full prescribing information for the text of the separate leaflet provided for patients. Physicians are advised to review the leaflet with their patients and to emphasize that ZYBAN contains the same active ingredient found in WELLBUTRIN and WELLBUTRIN SR used to treat depression and that ZYBAN should not be used in conjunction with WELLBUTRIN, WELLBUTRIN SR, or any other medications that contain bupropion hydrochloride.

Laboratory Tests: There are no specific laboratory tests recommended.

Drug Interactions: In vitro studies indicate that bupropion is primarily metabolized to hydroxybupropion by the CYP2B6 isoenzyme. Therefore, the potential exists for a drug interaction between ZYBAN and drugs that affect the CYP2B6 isoenzyme metabolism (e.g., orphenadrine and cyclophosphamide). The threohydrobupropion metabolite of bupropion does not appear to be produced by the cytochrome P450 isoenzymes. No systemic data have been collected on the metabolism of ZYBAN following concomitant administration with other drugs or, alternatively, the effect of concomitant administration of ZYBAN on the metabolism of other drugs.

Animal data indicated that bupropion may be an inducer of drug-metabolizing enzymes in humans. However, following chronic administration of bupropion, 100 mg t.i.d. to 8 healthy male volunteers for 14 days, there was no evidence of induction of its own metabolism. Because bupropion is extensively metabolized, the coadministration of other drugs may affect its clinical activity. In particular, certain drugs may induce the metabolism of bupropion (e.g., carbamazepine, phenobarbital, phenytoin), while other drugs may inhibit the metabolism of bupropion (e.g., cimetidine).

Studies in animals demonstrate that the acute toxicity of bupropion is enhanced by the MAO inhibitor phenelzine (see CONTRAINDICATIONS).

Limited clinical data suggest a higher incidence of adverse experiences in patients receiving concurrent administration of bupropion and levodopa. Administration of ZYBAN to patients receiving levodopa concurrently should be undertaken with caution, using small initial doses and gradual dose increases.

Concurrent administration of ZYBAN and agents (e.g., antipsychotics, antidepressants, theophylline, systemic steroids, etc.) or treatment regimens (e.g., abrupt discontinuation of benzodiazepines) that lower seizure threshold should be undertaken only with extreme caution (see WARNINGS).

Physiological changes resulting from smoking cessation itself, with or without treatment with ZYBAN, may alter the pharmacokinetics of some concomitant medications, which may require dosage adjustment.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Lifetime carcinogenicity studies were performed in rats and mice at doses up to 300 and 150 mg/kg per day, respectively. These doses are approximately ten and two times the maximum recommended human dose (MRHD), respectively, on a mg/m^2 basis. In the rat study, there was an increase in nodular proliferative lesions of the liver at doses of 100 to 300 mg/kg per day (approximately three to ten times the MRHD on a mg/m^2 basis); lower doses were not tested. The question of whether or not such lesions may be precursors of neoplasms of the liver is currently unresolved. Similar liver lesions were not seen in the mouse study, and no increase in malignant tumors of the liver and other organs was seen in either study.

Bupropion produced a positive response (two to three times control mutation rate) in two of five strains in the Ames bacterial mutagenicity test and an increase in chromosomal aberrations in one of three in vivo rat bone marrow cytogenic studies.

A fertility study in rats at doses up to 300 mg/kg revealed no evidence of impaired fertility.

Pregnancy: ***Teratogenic Effects: Pregnancy Category B:*** Teratology studies have been performed at doses up to 450 mg/kg in rats (approximately 14 times the MRHD on a mg/m^2 basis), and at doses up to 150 mg/kg in rabbits (approximately 10 times the MRHD on a mg/m^2 basis). There is no evidence of impaired fertility or harm to the fetus due to bupropion. There are no adequate and well-controlled studies in pregnant women. Because animal reproduction studies are not always predictive of human response, this drug should be used during pregnancy only if clearly needed. Pregnant smokers should be encouraged to attempt cessation using educational and behavioral interventions before pharmacological approaches are used.

Labor and Delivery: The effect of ZYBAN™ on labor and delivery in humans is unknown.

Nursing Mothers: Bupropion and its metabolites are secreted in human milk. Because of the potential for serious adverse reactions in nursing infants from ZYBAN, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Clinical trials with ZYBAN did not include individuals under the age of 18. Therefore, the safety and efficacy in a pediatric smoking population have not been established. The immediate-release formulation of bupropion was studied in 104 pediatric patients (age range, 6 to 16) in clinical trials of the drug for other indications. Although generally well tolerated, the limited exposure is insufficient to assess the safety of bupropion in pediatric patients.

Use in the Elderly: In general, older patients are known to metabolize drugs more slowly and to be more sensitive to the side effects of drugs. A single-dose pharmacokinetic study demonstrated that the disposition of bupropion and its metabolites in elderly subjects was similar to that of younger subjects (see CLINICAL PHARMACOLOGY section of full prescribing information). Of the approximately 5,600 patients who participated in clinical trials with bupropion sustained-release tablets (depression and smoking cessation studies), 303 were 60 to 69 years old and 88 were 70 years of age or older. The experience with patients 60 years of age or older was similar to that in younger patients.

ADVERSE REACTIONS: (see also WARNINGS and PRECAUTIONS)

The information included under ADVERSE REACTIONS is based primarily on data from the dose-response trial and the comparative trial that evaluated ZYBAN for smoking cessation (see CLINICAL TRIALS section of full prescribing information). Information on additional adverse events associated with the sustained-release formulation of bupropion in depression trials, as well as the immediate-release formulation of bupropion, is included in a separate section (see Other Events Observed During the Clinical Development and Postmarketing Experience of Bupropion).

Adverse Events Associated With the Discontinuation of Treatment: Adverse events were sufficiently troublesome to cause discontinuation of treatment in 8% of the 706 patients treated with ZYBAN and 5% of the 313 patients treated with placebo. The more common events leading to discontinuation of treatment with ZYBAN included nervous system disturbances (3.4%), primarily tremors, and skin disorders (2.4%), primarily rashes.

Incidence of Commonly Observed Adverse Events: The most commonly observed adverse events consistently associated with the use of ZYBAN were dry mouth and insomnia. The most commonly observed adverse events were defined as those that consistently occurred at a rate of five percentage points greater than that for placebo across clinical studies.

Dose Dependency of Adverse Events: The incidence of dry mouth and insomnia may be related to the dose of ZYBAN. The occurrence of these adverse events may be minimized by reducing the dose of ZYBAN. In addition, insomnia may be minimized by avoiding bedtime doses.

Adverse Events Occurring at an Incidence of 1% or More Among Patients Treated With ZYBAN: Table 1 enumerates selected treatment-emergent adverse events from the dose-response trial that occurred at an incidence of 1% or more and were more common in patients treated with ZYBAN compared to those treated with placebo. Table 2 enumerates selected treatment-emergent adverse events from the comparative trial that occurred at an incidence of 1% or more and were more common in patients treated with ZYBAN, NTS, or the combination of ZYBAN and NTS compared to those treated with placebo. Reported adverse events were classified using a COSTART-based dictionary.

Table 1

Treatment-Emergent Adverse Event Incidence in the Dose-Response Trial*

Body System/ Adverse Experience	ZYBAN™ 100 to 300 mg/day (n = 461) %	Placebo (n = 150) %
Body (General)		
Neck pain	2	<1
Allergic reaction	1	0
Cardiovascular		
Hot flashes	1	0
Hypertension	1	<1
Digestive		
Dry mouth	11	5
Increased appetite	2	<1
Anorexia	1	<1
Musculoskeletal		
Arthralgia	4	3
Myalgia	2	1
Nervous system		
Insomnia	31	21
Dizziness	8	7
Tremor	2	1
Somnolence	2	1
Thinking abnormality	1	0
Respiratory		
Bronchitis	2	0
Skin		
Pruritus	3	<1
Rash	3	<1
Dry skin	2	0
Urticaria	1	0
Special Senses		
Taste perversion	2	<1

*Selected adverse events with an incidence of at least 1% of patients treated with ZYBAN and more frequent than in the placebo group.

NEW AID TO
SMOKING
CESSATION
TREATMENT

FINALLY,
A NON-NICOTINE TABLET
THOUGHT TO WORK ON THE
BIOLOGY OF NICOTINE ADDICTION

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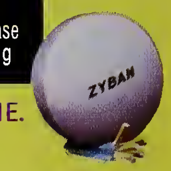
ZYBAN™

bupropion HCl sustained-release tablets 150 mg

NEUROCHEMISTRY. NOT NICOTINE.



The ZYBAN Advantage Plan™

Individual counseling and support with the only non-nicotine medication for smoking cessation

- Easy enrollment by patients
- Designed to address an individual's smoking "triggers"

Encourage your patients to enroll in the ZYBAN Advantage Plan. Advise them of the importance of participating in behavioral interventions and counseling as part of their quit attempt.

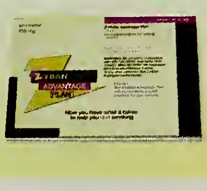
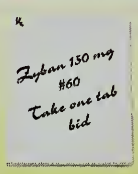
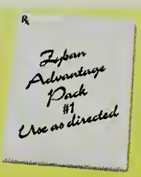
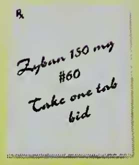
Usage

- ZYBAN is indicated as an aid to smoking cessation treatment in smokers 18 years of age and older.

How to conveniently prescribe ZYBAN

Dosing should begin at 150 mg/day for the first 3 days.

Increase dosage to the recommended and maximum 300 mg/day (150 mg bid) for most patients for 7 to 12 weeks.* Allow at least 8 hours between successive doses.

MONTH 1	MONTHS 2 TO 3
RX OPTION 1 **Dispense ZYBAN Sample Pack:** Contains first 3 days of therapy and the ZYBAN Advantage Plan™ (Available only from your Glaxo Wellcome representative)  +  ℞ Zyban 150 mg #60 Take one tab bid **OR** **RX OPTION 2** **Write Rx for ZYBAN Advantage Pack™:** Contains 1 month of therapy and the ZYBAN Advantage Plan (Available at pharmacies)  ℞ Zyban Advantage Pack #1 Use as directed	 ℞ Zyban 150 mg #60 Take one tab bid **Write Rx** for ZYBAN Tablets 150 mg bid #60

*Clinical data are not available on the long-term use (>12 weeks) of bupropion for smoking cessation.

ZYBAN is contraindicated in patients with a seizure disorder or with a current or prior diagnosis of bulimia or anorexia nervosa. The concurrent administration of ZYBAN Tablets and an MAO inhibitor is contraindicated.

ZYBAN contains the same active ingredient found in WELLBUTRIN® and WELLBUTRIN SR® used to treat depression, and should not be used in combination with WELLBUTRIN, WELLBUTRIN SR, or any other medications that contain bupropion.

The use of bupropion is associated with a dose-dependent risk of seizures. Therefore, *clinicians should not prescribe doses over 300 mg/day for smoking cessation*. The risk of seizures is also related to patient factors, clinical situation, and concurrent medications, which must be considered in selection of patients for therapy with ZYBAN.

Please consult brief summary of Prescribing Information on next page.

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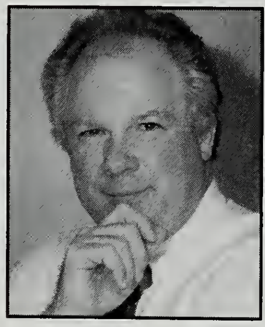

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The Connecticut Initiative

RICHARD BLUMENTHAL, ESQ.

AT every stage of life, even in the face of terminal or irreversible illnesses, we confront choices that define ourselves and determine how happy our days will be. Education is key to making free and informed choices, which is the reason we are launching the Physician Assisted Living (PAL) initiative here in Connecticut.

While most recent attention has focused on assisted suicide, our purpose in physician assisted living is to offer other choices, without criticizing or condemning any particular individual's decision. Very simply, the PAL program offers a means for people to become more aware of their options—discussing them with their physicians, family, clergy, and others—and to indicate their desires and preferences about the kind of care they choose to receive.

Through a document distributed to them in advance of the most severe state of their illnesses, patients would have am opportunity to choose hospice care before experiencing the depression and anxiety that may accompany terminal illness and cloud or confuse their judgment.

Such planning for death—perhaps repugnant in concept, but sometimes vitally necessary in practice—already is done through many documents that are legally binding, including the living will. The PAL document would be different: it would have no binding legal weight, but would be a statement of preference and a means of patient education, so that people will be able to make more informed *choices.*

The initiative is a joint effort between my office, the John Thompson Hospice Institute, Connecticut Bar Association members, and is supported by clergy, professional leaders, and others, demonstrating the kind of broad power elicited by this idea and concept.

Planning for end-of-life decisions is increasingly critical for all of us, regardless of our age, income, or state of health. Attorneys advise us to make wills so as to avoid conflicts and confusion in the disposition of our assets after death, and accountants tell us to take steps that will reduce taxes paid by ourselves and our beneficiaries.

Yet, planning for our own health care in our last days before death is often done—if at all—haphazardly and usually without wise, caring advice from physicians and others with expertise. Too often, elderly friends and relatives struggle at the end of their days, linked to complex life support systems and without hope of recovery.

PAL offers the opportunity to avoid situations that would be abhorrent to people if they could foresee them, but avoidable if they simply could plan or think ahead to those last days.

Connecticut has been a leader in developing planning documents for end-of-life decisions—the living will and power of attorney for health care decisions. These important initiatives have helped countless individuals to continue in control of their lives, even as they face death.

The living will enables an individual to determine what forms of life support and other extraordinary life-sustaining measures, if any, will be instituted when he or she can no longer communicate those instructions explicitly or directly.

The living will and power of attorney for health care decisions, however, address only end-of-life withdrawal of life support decisions.

Through the PAL initiative, individuals may express a preference for hospice care, before the onslaught of pain and depression, through a document similar to the living will and power of attorney for health care instruments Hospice care is designed to address the medical and

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RICHARD BLUMENTHAL, ESQ., Attorney General, State of Connecticut. Previously, he was a member of the Connecticut State Senate from 1987 to 1990 and the Connecticut House of Representatives between 1984 and 1987. He served as United States Attorney for Connecticut from 1977 to 1981.

emotional needs of patients with terminal illnesses—the needs of both patients and their families—as they endure the horrendous physical, emotional, and psychological toll often imposed.

PAL includes a document entitled, "Notice of Desire for Hospice Care." This form is clearly drafted and explains the basic tenets of hospice. It states that the patient should talk with the physician, friends, and relatives about hospice; it does not carry the legal weight of the living will or attorney for health care decisions, and clearly states that the decision for hospice care may be overridden by the physician and the patient's relatives if circumstances change and hospice care seems no longer to be the appropriate choice.

PAL also includes a consumer brochure that explains the need for end-of-life planning and offers various planning alternatives for the patient. The PAL initiative will be publicized through articles, symposiums, discussion groups, and, of course, a WEB site.

Plainly, the PAL document is in the best traditions of consumer education—encouraging and facilitating frank, open conversation and awareness about the advantages, downsides, costs, and benefits of hospice care. As attorney general, I have fought for better consumer education about many goods and services offered in the marketplace, because an informed consumer is less likely to become a victim of fraud or misinformation, and more likely to be satisfied with goods and services bought for the lowest possible price.

Consumer education about the choices for end-of-life care is no less important. The PAL initiative is based on this principle. PAL recognizes that hospice is not for everyone, just as the living will and durable power of attorney for health care decisions is not universally sought. Nonetheless, consumers should be aware of their choices and have the opportunity to make them.

At some point, Connecticut should decide whether the Notice of Desire for Hospice Care or a similar notice should enjoy the legal weight given to the living will and power of attorney for health-care decisions. Why should only certain end-of-life decisions be incorporated into a legally-binding document? As the PAL initiative spreads, perhaps it will provide the critical impetus to General Assembly action.

The PAL initiative should not be limited to Connecticut. I hope that other state public officials will be encouraged by our success to implement a similar initiative in their states. I am contacting all 50 state attorneys general to urge their consideration of a PAL initiative, which will give millions of people, regardless of geographic, ethnic, or other background, an enhanced ability to plan for their last days.

With the PAL initiative, patients, and their physicians will be encouraged to make a concerted effort to plan ahead for their end-of-life decisions.

Physician Assisted Living: The PAL Partner Initiative

GERALD E. THOMSON, M.D., ROSEMARY JOHNSON HURZELER, R.N., M.P.H., H.A.,
GILBERT FRAUNHAR, M.A., AND KAYE HOWE, M.P.H.

PROLOGUE—With all the advances in the care of patients, our many failures in the provision of end of life care have been striking. Although in some circumstances we simply may not know what the right actions would be on behalf of patients, all agree with the need for companionate attention to the comfort of those who are dying. Connecticut's Physician Assisted Living Initiative is an exemplary program, providing a means and framework for coordinated planning by all concerned in the best interest of the dying patient. For physicians, it is the opportunity to create the best possible setting to provide responsive, support and compassionate care.

Gerald E. Thomson, M.D.,
Lambert and Sonneborn Professor of Medicine
and Senior Associate Dean
Columbia University

Why PAL? and Why Now?

IN recent times, awareness of the sanctity of patient choice has reached new levels of sophistication. The new initiative in Connecticut, Physician Assisted Living (PAL) will spread across the nation. In the language of Wall Street, Americans will participate in a " technical rally" through which each of us will be given the chance to reinvest in ourselves and our future well-being. PAL is a gift to all persons, whether they are well or unwell, which introduces them to the hospice concept—a care modality that will add life to their days if not days to their lives, if and when they confront irreversible illness.

Ten Principles of Hospice Care:

1. Patient and family are regarded as the unit of care.
2. Services are physician-directed and nurse-coordinated.
3. Emphasis is on control of symptoms (physical, sociological, spiritual, psychological).
4. Care is provided by an interdisciplinary team.
5. Trained volunteers are an integral part of the team.
6. Services are available on a 24-hours a day, seven-days a week on call basis with emphasis on availability of medical and nursing skills.
7. Family members receive bereavement follow-up.
8. Home care and inpatient care are coordinated.
9. Patients accepted on the basis of health needs, not on ability to pay.
10. There are structured systems for staff support and communication.

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GERALD E. THOMSON, M.D., Samuel Lambert Professor of Medicine, assistant vice president in the Faculty of Medicine, and an associate dean in the College of Physicians and Surgeons, he was elected president of the American College of Physicians (ACP) at the college's 76th annual session March 16–19 in Atlanta. He is past president of the New York Society of Nephrology, the Society of Urban Physicians, and the Association of Academic Physicians; ROSEMARY JOHNSON HURZELER, R.N., M.P.H., H.A., president and CEO of The Connecticut Hospice, Inc., and the John D. Thompson Hospice Institute for Education, Training, and Research, Inc. Currently chairman of the Hospice Association of America and treasurer for the National Association of Home Care. Chairman of the Yale Alumni in Public Health from 1962–96. GILBERT FRAUNHAR, M.A., Connecticut Hospice volunteer since October 1980. He received a bachelors degree from Harvard College and a Masters from the University of Bridgeport. KAYE HOWE, M.P.H., formerly Dean of Student Affairs, Yale University School of Medicine, Department of Epidemiology and Public Health (deceased 3 December 1997).

The Introduction of Physician Assisted Living (PAL)

The principles of hospice care *(see box on previous page)* were introduced to this nation through a grassroots initiative early in the 1970s when the first American hospice program, The Connecticut Hospice, Inc., began caring for its first hospice home-care patient from its New Haven headquarters on Prospect Street.

The first discussions of hospice as a concept of care began in 1967 when Dame Cicely Saunders, O.M., F.R.C.P., founder of the modern hospice movement, met with a small group of visionaries at Yale University School of Medicine. In 1974, The Connecticut Hospice initiated care for patients with cancer diagnoses, under a three-year grant from the National Cancer Institute. In 1979 Connecticut led the nation in creating the first licensure regulations for hospice care.

In the decade that followed, the hospice model of care was recognized and replicated across the country. In 1977, then Secretary of Health, Education and Welfare, Joseph A. Califano, Jr., promulgated a request for proposals for a hospice demonstration project. As a result of the information generated in that study, the federal government created the Medicare Hospice Benefit in 1983 to be part of the prospective payment system for hospitals.[1] From that time to the present, the number of Medicare-certified hospices has grown from 31 in 1984 to over 2,000 in 1996.[2]

Nearly 75% of all hospice patients are age 65 or older.[3] A description of the hospice population by disease category reveals that a majority of patients have diagnosed neoplasms.[4]

Soon after its inception, The Connecticut Hospice, Inc., created the research and teaching component for hospice care in the United States, The John D. Thompson Hospice Institute for Education, Training and Research. This Institute was incorporated in 1978 to study care of the terminally ill, and in 1995, the Institute, through its research, identified a comprehensive absence of awareness by the general public as to the existence of the hospice choice, its possible application to patients' future needs, and care barriers to effective hospice care. A similar absence of awareness was identified as well as serious gaps in knowledge and experience among health-care professionals regarding hospice care as an alternative to mainstream terminal care. As a result, the Physician Assisted Living (PAL) Partners initiative was conceived to give patients and health-care providers a means for establishing their choice of the hospice option for compassionate care *in advance,* so that individuals might exercise that option in a timely and productive manner.

One of the paradoxes of the many advances in medical care today is that more people are now enduring prolonged deaths from chronic, progressive, and irreversible diseases. If they are not aware of, or do not receive the full and appropriate care and support, they face the prospect of overwhelming physical pain, excessive financial burdens, and emotional isolation. Too often once patients learn that they have a chronic, progressive, or irreversible disease, their reaction is skewed by the demands of the disease itself, which may have degenerative cognitive components, as well as psychiatric aspects, including depression or delusional elements.

The hospice principles have proven to be effective in addressing the special needs of these patients, yet most persons are not aware of their existence and therefore, hospice is not even considered by most patients at the end of life in the United States. PAL Partners strives to achieve the broadest dissemination of information relating to the hospice care option and the hospice principles of care, to assure the greatest possible access to, and possible choice of, hospice.

PAL Partners Goals and Objectives

The John D. Thompson Hospice Institute in collaboration with professionals representing medicine, law, nursing, social sciences, theology, and arts designed the PAL Partners Initiative to achieve these objectives:

◇ Assure that potential patients and their families are aware of their full range of health-care options when a disease is diagnosed as irreversible.

◇ Create greater access to hospice care by advising all potential patients of the availability of the hospice option, preferably well before they need hospice care or are experiencing serious illness.

◇ Afford the mechanism and opportunity for all patients to designate their preference for hospice care in writing as an advance directive.

◇ Educate patients and health-care providers regarding the benefits of hospice care as an early intervention for patients with advanced irreversible illness, and the appropriate clinical decision-making processes to facilitate transition to PAL Partners care giving through a hospice program.

◇ Encourage dialogue both at the patient and provider level around the principles of hospice care and how care might be optimized during an advanced progressive, irreversible illness.

◇ Inspire all physicians to continue to collaborate with patients regardless of length of life.

Advancing Patient Care Toward the Year 2000

The emphasis of the PAL initiative is on the dialogue and conversation that should occur between physician and patient. In the current health-care environment, physicians are distanced from their patients as a consequence of the increasing emphasis on subspecialities, the intricacies of managed care, and the specter of malpractice litigation. PAL solidifies the physician's role as part of *the process* of preparing for the eventuality of irreversible illness.

The role of the physician in PAL is not only crucial, it is indispensable. The goal of PAL is to raise the level of discussion and introduce crucial questions with which the physician and patient and family must contend—preferably well in advance of the complications of serious, chronic, or irreversible illness. In the same sense that the Hippocratic tradition brings all physicians to the pledge, "first do no harm," PAL brings them to thoughtful discussion with their patients of the options available in the face of serious, life-defining illness. Physician involvement takes place not only within the hospice care modality but as part of the process of moving a patient into the hospice continuum of care. In both instances this role is one only the physician can play and a responsibility that only a physician can fulfill.

It is well established and fully acknowledged that health care revolves around the medical management of patient care. The physician's orders determine the course of the patient's treatment, and, with the advent of managed care, physician authorization now dictates the reimbursement for patient care. The physician must not only direct care at the bedside, but must steer the care process through a maze of medical review and payment mechanisms. PAL Partners must be envisioned as an all-encompassing dimension of patient care, not bounded by revenue and reimbursement parameters, but broadly translated into a wide variety of settings, all of which have the shared goal of improving palliative treatment in the crucial weeks and months of a patient's final illness.

It is anticipated that PAL will be integrated into medical schools, nursing and other professional colleges, and teaching hospitals, as well as the continuing education of health-care professionals.[5] Internet access to the Physician Assisted Living website will continue the dialogue and exchange of information that PAL initiates. The educational component of the PAL initiative will enable the PAL Partners concept to realize its full potential in facilitating the physician's role in translating its 10 principles into reality for their patients who have executed a PAL directive.

The Premise of PAL

PAL proposes 10 principles which, though immutable, are eminently flexible. They are adaptable to every community and every care system, and to the special circumstance of the providers and recipients of health care. The 10 principles upon which PAL is founded are pliant, guiding philosophies that describe what care givers should know to address the needs of patients and families. While PAL promotes *advance* consideration of issues related to care of the patient with an irreversible illness, the configuration of end-of-life care can be adapted to each changing situation regardless of the time at which PAL is introduced.

The Ten Principles:

1. *The patient and family are the unit of care.*—The PAL initiative supports the family's participation in the care of a seriously ill patient by making provision *in advance* for the array of services the patient chooses to receive. The patient's election of the hospice philosophy guides the care she will receive and defines the levels of care and types of services to be provided. Inclusion of the family not only acknowledges their role as care givers but includes their care needs and mandates that those needs be addressed as part of treatment *both before and after* the patient's death.

2. *Services are physician-directed and nurse coordinated.*—The PAL Partners initiative and the physician's role in caring for the patient recognizes that the physician-patient relationship is central to patient choice and decision-making.[1] The role of the professional nurse is to utilize the nursing skills, integrating all dimensions of hospice care and the treatment of all symptoms. The physician and nurse team constitute the infrastructure on which all patient care planning is founded regardless of setting. The principles of hospice care need not be limited in their application to the confines of formalized, certified hospice programs.

3. *PAL emphasizes control of symptoms—physical, sociological, spiritual, psychological.*—In fulfilling the mandate of the PAL initiative, hospice care provides comprehensive management of symptoms related to advanced irreversible illness. The goal of hospice care is control of pain in all its manifestations—somatic, sociological, spiritual, and psychological. The physician's control of the pharmacological and nonpharmacological interventions is the means by which pain and symptom management is accomplished.

4. *Care is provided by an interdisciplinary team of care givers.*—The PAL Partners initiative facilitates the patient's election of services ranging from medical and nursing care to social work, financial counseling, chaplaincy, pharmacy, dietary consultation and services, volunteer support, and bereavement follow-up. The interdisciplinary approach to hospice care calls upon all specialties to contribute to patient well-being, supporting and guiding care at the end of life.

5. *Trained volunteers are an integral part of the team.*—The utilization of volunteers and the mandate that all hospice care shall include volunteer support[6] brings the

talents, experiences, and resources of the many to patient and families in need of hospice care,[7] supplementing the services of the professional staff.

6. *Services are available 24-hours a day, seven-days a* week.—PAL Partners validates the need of patients and families to have not only continuity of care but continuous, uninterrupted access to care givers with the skills as well as the knowledge of their needs.

7. *Family members receive bereavement follow-up.*—A PAL election assures that the preventive aspect of hospice care—bereavement care for family members after the patient's death for a minimum of one year—will be available to support them in their grief after the loss of a beloved friend or family member, enabling them to go on fully to live their lives

8. *Home care and inpatient coordinated.*—In electing the hospice option through PAL the patient or patient-to-be elects a full scope of services delivered in any number of inpatient or home settings. The specific way in which the precepts of hospice care are carried out is secondary to the goal of creating universal access to hospice for all who choose it.

9. *Patients are accepted on the basis of their health needs, not on ability to pay.*—PAL assures the patient and family that access to care will never be denied at the time when care becomes most resource-demanding and when resources are most likely to be most depleted.

10. *There are structured systems for staff support and communication.*—PAL acknowledges that the care of a seriously ill or terminally ill patient requires the full attention of a robust staff who can function in a well orchestrated way. Maintenance of the infrastructure for staff to develop, refine, and continually nurture their strengths as care givers as well as teachers of patients and their families is essential to the continued success of the hospice plan of care.

The Future for PAL Partners

The hospice movement has been, in a sense, the victim of its own success. As more individuals have learned about the hospice concept and hospice care is more readily available, so too has the perception of hospice as the talisman of life's end become more commonplace. Contrary to popular perception, the specialized care of hospice is equally applicable to patients with advanced disease as it is to patients with a severely limited life expectancy. PAL, in embracing the principles of hospice care, offers hope to patients and their families.

Conclusion

PAL must be seen as a beginning that initiates discussion not only between health-care professionals and their patients, but among care-giving professionals of all disciplines. PAL prompts the care giving community to define what care givers should know. PAL is the educational program to prepare caregivers for difficult issues that arise in the face of irreversible illness. PAL will serve as the means that defines the characteristics of the knowledgeable provider who is prepared to serve the patient and family confronting terminal illness. It is the means by which providers and patients alike can:

Communicate on issues related to their care in the event of serious illness;

Articulate their concerns, wishes, and reservations about these issues;

Recognize the issues they need to resolve; and

Evidence their decisions in a written document that articulates care preferences.

As we approach the millennium, the hospice movement enters a new era in its evolution embodied in the PAL Partners initiative. The import of PAL is that it establishes a set of values which all providers—in all specialties and disciplines, in comprehensive cancer centers, and community hospitals, in licensed certified hospices, and home health agencies, in intensive care and subacute care—can apply to the care of their patients by engaging their patients in considering and committing to the PAL principles. PAL opens up a frontier for care-giving in the next century that returns to the grassroots origins of hospice care. As this century approaches its close, PAL fulfills the prophecy hospice has put forth for all patients—to comfort and care always in all ways.

REFERENCES

1. PL 93-641 was enacted and codified as U.S.C. 1965.
2. Source: Health Care Financing Administration (HCFA), Health Standards and Quality Bureau (HSQB). Data as of December 1996.
3. National hospice usage by client age, gender, race, and marital status, 1994. *Hospice Facts and Statistics 1996:* A publication of the Hospice Association of America. 1996; p. 7.
4. Table 14: Percent of current clients receiving hospice care, by first-listed diagnosis at admission, 1994. *Hospice Facts and Statistics* 1997: p. 7.
5. The John D. Thompson Hospice Institute has created an educational initiative, entitled Train the Trainer © for which it has received funding to 1) educate physicians and health care professionals of all disciplines regarding the appropriate criteria for referral of a patient and family to hospice care and 2) provide hands-on training in hospice care. The curriculum for Train the Trainer is designed to equip those who receive the training to return to their home institution or agency and train others.
6. The federal standard on which all hospice care is modeled, (42 U.S.C. Section 1965 et seq.) requires that a hospice must document and maintain a volunteer staff sufficient to provide administrative or direct patient care in an amount that, at a minimum, equals five percent of total patient care hours of all paid hospice employees and contract staff.
7. Hospice Facts and Statistics: 1996; published by the Hospice Association of America, indicate that approximately a quarter of a million patients in the United States die each year in need of a palliative care intervention.

Connecticut Leads the Way in the Physician Assisted Living Initiative

CONGRESSWOMAN ROSA L. DeLAURO

AS the "baby boom" generation draws closer to retirement age, our nation faces an explosion in health-care costs. We will need to explore innovative strategies to hold costs down, while at the same time maintaining the highest quality of care to people with incurable illnesses, and while at the same time holding down the costs that come with the extensive medical care of a terminal illness. Connecticut's hospice program is an excellent model for the country as a whole to follow.

Connecticut led the way for the nation when America's first hospice care unit opened in the early 1970s. In 1978, the Connecticut Hospice created the research and teaching component for hospice care with the opening of the John D. Thompson Hospice Institute for Education, Training, and Research. The Institute fostered ground-breaking research in issues surrounding care for the terminally ill.

The Thompson Institute and the Connecticut Hospice program have thrived and expanded since that time. Based on the success of these models, hospice units have moved from Connecticut to hospitals and nursing homes throughout the nation. Countless numbers of terminally ill patients across the nation depend on the care they receive through hospice. In this, along with so many other health-care issues, Connecticut has provided an example to the nation in promoting a health-care climate in which the needs of the patients and their families come first.

Hospice is a blessing for the patients and families who depend on these services. As a cancer survivor and a strong hospice supporter, I understand how hospice can truly become a second family for patients grappling with a serious and terminal illness—with a talented and caring staff who are always ready to help when they are needed, and patients who spend time together, reaching out to offer loving support. A hospice inpatient unit is more than just a hospital ward—it is a true community.

Connecticut, a pioneer in the hospice movement, and is again blazing a trail in the area of heath care with the Physician Assisted Living (PAL) Partners initiative, announced in September by Attorney General Richard Blumenthal. This program is geared to inform people about hospice care and to give them the opportunity to consider their options at a time when they are healthy and not immediately facing a terminal illness.

Once a diagnosis has been made, it often becomes difficult to make an educated and informed decision as to medical treatment. Conflicting emotions rage out of control—anger, fear, denial, deep depression are all too common, not just for the patients, but for their families as well. When patients are trying to come to grips with their own mortality, it is difficult to focus and make educated decisions on issues as to what medical treatment they want and what measures should be taken (or avoided) to prolong life.

Hospice care can help ease the pain and suffering that comes with a terminal illness. Hospice allows patients to spend their final days in a caring atmosphere where pain is controlled and where suffering—both physical and emotional—can be minimized.

Working with doctors, religious organizations, hospice, and other medical groups, PAL will help to educate Connecticut citizens regarding the range of their options before they come face-to-face with that most devastating of news.

Congresswoman ROSA L. DeLAURO, Connecticut's Third District, was first elected to Congress in 1990 and was reelected in 1992, 1994, and 1996. At the beginning of the 105th Congress, was renamed to the Appropriations Committee, where she had served during the 103rd Congress. She sits on the Labor/HHS and the Agriculture Subcommittees. During the 104th Congress she served on the National Security Committee.

The initiative is aimed at increasing doctor-patient collaboration. Doctors are educated as to available hospice programs and encouraged to sit down with patients to discuss the possibility.

The program includes a directive to be signed by the patient indicating her desire to receive hospice care should she ever be faced with a terminal illness. Although this document is not legally binding, it affords an excellent opportunity for patients to play a role in their medical care.

Patient choice in health care is an issue at the top of our nation's agenda. Choice of doctor, specialist, treatment, and even length of hospital stay is increasingly being made by insurance companies rather than by the doctors and patients who should be making these important medical decisions.

And that is exactly what PAL is designed to foster—conversations and decisions made between doctors, patients, and family. The 10 principles incorporated in the program are common sense and flexible, and acknowledge the fact that every case is different. But the key standards remain the same, among them: addressing the needs of the patient and his family; allowing the physician to coordinate medical services; controlling symptoms through physical, sociological, spiritual, and psychological care; and coordinating home care and inpatient care.

When faced with a serious illness, understanding the implications and making decisions regarding the course of medical treatment is often one of the few things patients can do to maintain a measure of control in their lives. Critical illnesses too often take decisions from you; the idea that you are no longer in control of your body is difficult to fathom; it can be unimaginably more frustrating when an insurance company takes away that control from you.

Hospice care, and the PAL program, helps to put that power of control and decision making back in the hands of patients and their doctors. Patients can stand up and say what type of care they want and what care they do not want. Hospice home care allows patients to retain their independence and spend time with their families while receiving care to control pain and monitor their illness .

Hospice home care also helps to control costs; home care is far more cost-effective than treating a patient in a hospital for a long period of time. As we move into the next century and attempt to find strategies to prolong the life of the Medicare Trust Fund, home care is an option we must explore in greater detail.

I am proud that Connecticut has again put itself out in front in the evolution of our heath-care system. From the start of the hospice movement, to ensuring that all patients have knowledge of and access to the options available, Connecticut has led the way. As we see the PAL initiative move into action, I hope that Connecticut will once again prove itself to be a model for the nation.

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State Leadership Perspective

SENATOR GEORGE L. "DOC" GUNTHER AND SENATOR TONI HARP

ONE of the mainstays of our inalienable rights in this country is the "right to choose." The application of this right to health-care choice was clearly evidenced in 1990 when the U.S. Congress adopted the Patient Self-Determination Act requiring all providers of health care in all settings to query patients as to whether or not they had executed advance directives pertaining to their health care, particularly the withholding or withdrawing of life-sustaining treatment. This right has been reinforced in Connecticut by our Living Will statute.[2]

The PAL Partners takes the next step in protecting and preserving choice and access to care for those who may face am irreversible illness. Attorney General Blumenthal, through the administrative process, has created a new opportunity for our citizens to choose how they wish to be cared for if faced with irreversible illness.

Those who receive a diagnosis of am irreversible illness will, be devastated by the news. Not only is the afflicted person torn apart, but his or her family becomes an integral part not only of the devastation, but of the decision making that must begin from the point of diagnosis. It is important that when we are in good health, and calmer minds prevail, we have the opportunity to think about the possibility of such events, and to decide, before we have to, what course of action we would want followed. Many of us do this when we complete our wills and living wills. The PAL initiative makes us aware of the opportunity to receive palliative and hospice care so that in the process of putting our advance directives in order we can also express our choices with regard to the penultimate chapter of our lives, not just the last chapter.

As members of Connecticut's legislature, we are proud to support this endeavor. The State of Connecticut is the home of the first hospice in the United States. The Connecticut legislature was integral to the funding that supported an important "new" model of health care, hospice, that then swept the nation and has been replicated in all 50 states in a similar fashion, through the PAL Partners initiative those who champion the interests of the patients and their families facing irreversible illness will be encouraged to replicate the PAL initiative across the country.

Connecticut's leadership role in PAL must now take the form of funding initiatives to educate and train health-care providers with regard to the implications and implementation of physician assisted living programs. As with other advance directives, providers will be the pivot point from which consumers will receive the information critical to their decision-making it is essential that providers be fully versed in the tenets of hospice care, the identification of individual need for hospice, and the means for insuring that each and every patient and family who needs and desires hospice services will receive them.

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1. The Patient Self-Determination Act was signed into law as part of the Omnibus Budget Reconciliation Act of 1990 (OBRA, 1990).
2. Conn. Gen. Statutes Section 19a-575 et seq.

SENATOR GEORGE L. "DOC" GUNTHER, N.D., 21st Senatorial District, Deputy Minority Leader, currently serving his 16th term. A retired Naturopathic physician, "Doc" has served on the Public Health Committee since he arrived in the Senate in 1967, serving twice as Senate Chairman. He currently is Ranking Member. Other committees he currently serves on are Regulation Review (Ranking Member) and Legislative Management. He also is Co-Chair of the Bi-State Long Island Sound Committee and is a Commissioner on the Atlantic States Marine Fisheries Commission. SENATOR TONI HARP, 10th Senatorial District, currently serving her third term as the Connecticut State Senator from the 10th Senatorial District towns of New Haven and West Haven. She is currently serving as an Assistant Senate Majority Leader and the Chair of the Legislature's Public Health Committee Also appointed the Vice-Chair of the Appropriations Committee, Chair of the Appropriations Committee's Health and Hospitals subcommittee, and a member of both the Executive and Legislative Nominations and Commerce Committees. She also chairs the Medicaid Managed Care Council.

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PAL—The Counterweight to Physician Assisted Suicide

JOSEPH A. CALIFANO, JR., ESQ.

> Whether it is in someone's best interest that his life end in one way rather than another depends on so much else that is special about him—about the shape and character of his life and his own sense of his integrity and critical interests—that no uniform collective decision can possibly hope to serve everyone even decently.[1]

CONNECTICUT gave the nation its first hospice. With Physician Assisted Living, Connecticut becomes the first state to adopt the best way to assure the family of a terminally ill patient of a death with dignity and compassion.

In June of this year, the U.S. Supreme Court addressed the issue of physician assisted suicide in *Vacco vs Quill,*–U.S.–117 S. Ct. 2293 (1997) and *Washington vs Glucksberg,* –U.S.–117 S. Ct. 2258 (1997). In these cases the Court determined that a state ban on physician assisted suicide does not violate the Equal Protection Clause of the 14th Amendment.[2] In so doing the Court recognized the distinction between letting a patient die and making that patient die, between assisting suicide and withdrawing life-sustaining treatment as "a distinction widely recognized and endorsed in the medical profession and in our legal tradition, [as] both important and logical; it is certainly rational."[3]

For two decades courts, legislatures, and the vast majority of medical professionals have respected the "real distinction between the self-infliction of deadly harm and a self-determination against artificial life support."[4] In the case of *Cruzan vs Director, Mo. Dept. of Health,* 497 U.S. 261, 278 (1990) which presented issues similar to the Karen Ann Quinlan case, the Court recognized that the State of Missouri's interest did not outweigh Nancy Cruzan's liberty interest in refusing medical treatment. Justice Stevens dissent acknowledged that:

> Nancy Curzan's interest in life, no less than that of any other person, includes an interest in how she will be thought of after her death by those whose opinions mattered to her. There can be no doubt that her life made her dear to her family and to others. How she dies will affect how that life is remembered.[5]

This passage is especially poignant and applicable to Physician Assisted Living (PAL) The PAL initiative is about each patient and her family's interest in life—how it is lived to its fullest to its end and how it is remembered "by those whose opinions matter." PAL is about making decisions about how to confront serious, advanced, irreversible illness.

Justice Stevens, concurring in *Vacco,* notes that *Cruzan* "did give recognition, not just to vague, unbridled notions of autonomy, but to the more specific interest in making decisions about how to confront an imminent death."[6] Justice Stevens goes on to explore this notion in saying:

> Although there is no absolute right to physician-assisted suicide, Cruzan makes it clear that some individuals who no longer have the option of deciding whether to live or die because they are already on the threshold of death have a constitutionally protected interest that may outweigh the State's interest in preserving life at all costs. The liberty interest at stake in a case like this differs from, and is stronger than, both the common-law right to refuse medical treatment and the unbridled interest in deciding whether to live or die. It is an interest in *deciding how rather than whether,* a critical threshold shall be crossed.[6] *(Emphasis added)*

PAL Partners offers the means to create directives for "how, rather than whether, a critical threshold shall be crossed." Advances in medical technology that created the

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JOSEPH A. CALIFANO, JR., ESQ., Chairman and President, The National Center on Addiction and Substance Abuse, Columbia University; Secretary of Health, Education, and Welfare from 1977–1979. During his tenure in that post, at the request of Governor Ella Grasso, he awarded Connecticut the first funds H.E.W. ever gave to establish Connecticut Hospice in New Haven.

ability to sustain life also gave rise to the issues presented in the numerous cases that reached the courts where the withdrawal of life-sustaining treatment was addressed. Federal and state legislatures responded to the issues presented in many cases from *Quinlan* to *Cruzan*, with laws that enables patient self-determination and the creation of advance directives in anticipation of an individual becoming unable to decide or articulate a decision previously made.

As a parallel, Connecticut's PAL initiative responds to the issues presented in *Vacco vs Quill* and *Washington vs Glucksberg*. In the same way the Court grapples with the differences between assisting suicide and withdrawing life-sustaining treatment, the PAL Partners initiative assists patients in preparing for the eventuality of those very issues being presented in their lives. PAL offers a dignified solution to the unnecessary dilemma of physician-assisted suicide or a life extended by tubes and machines. It offers a viable alternative to the desperate choice that confronts patients whose life is limited. It offers the patient an opportunity to die in the arms of family and friends rather than tied to tubes and machines.

As the hospice movement came of age in the United States, the PAL Partners initiative will mature into a fully adopted precept of advance directive initiative. In future years, Americans will remember that these two companion pieces, hospice and Physician Assisted Living, so integral to care of the terminally ill, both originated in Connecticut, as they are integrated into the care of all patients and their families facing irreversible illness, by all providers, in all settings.

REFERENCES

1. Dworkin R: *Life's Dominion.* New York, NY: Kopt; 1993:213.
2. The Fourteenth Amendment of the United States Constitution states in Section 1: No state shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any state deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.
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The Physician Assisted Living (PAL) Program

THOMAS HOYER, B.S., M.S.

THE Physician Assisted Living (PAL) program represents a bold and I hope successful effort to help people grasp the basic concepts they need in order effectively to make choices about the time they have remaining in their lives. The basic concept, is captured in the title—Physician Assisted Living—living being the key word. Death occurs in a moment and all the time that stretches from birth until that moment is, in fact, life in which choices need to be made. The PAL program promises to create a context that will foster the learning necessary to understanding and choice.

Begin with knowledge and choice : Alexis de Tocqueville and countless other observers have commented on the individualism that underlies our American social institutions and behavior. In today's society we take the "right" to know all there is to know about ourselves very seriously, even extending it to the right to know what information others might have on file about us. Similarly, wherever there is the option to make a choice, we take the strong view that we have a "right" to choose and included in this, is the "right" to be informed of the options, to be offered choices.

The Medicare program was enacted with strong provisions asserting that citizens covered by the program would have the right to receive services from any provider willing to meet the program's standards and provide the care. The beneficiary makes the choices; Medicare pays the bills.

But, of course, choice is rarely a simple issue especially if the facts are complex or obscure. For choice to be a real possibility for people, there must be information about the possibilities available, as well as a way for the individuals to receive this information and to consider it in making their choices. The Medicare program has *The Medicare Handbook* and countless other publications to assist beneficiaries in learning the options and making choices. The Department of Health and Human Services (HHS) also provides grants for insurance and other kinds of counseling for the elderly. Still, the appropriate reach of HHS's efforts extends only to making sure that information is available and to assure that choices are honored. To go further than that is to invade the individual's right to choose.

The result of these limitations is that we have a program that offers the right to refuse treatment; that mandates "rights" for residents of nursing homes and other providers; that requires providers to inform patients of all their rights and potential liabilities; and that instructs providers to ask whether an individual has an "advance directive" and, if so, to provide care in compliance with it. Medicare's hospice benefit, where a patient makes an "election" for hospice services, requires an exchange of information and full understanding between the patient and the hospice provider. We *require* that the patient acknowledge at least that "he or she has been given a full understanding of the palliative rather than curative nature of hospice care, as it relates to the individual's terminal illness."

At the time this language was written, it was viewed as an easier way to provide a hard truth about prognosis and its result, but it was done that way because information from the hospice community persuaded HCFA that the task of helping individuals work through the issues in-

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volved required that hospice personnel spend some time in assisting patients to understand—in Connecticut's terms, the meaning of palliative care and "assisted living." It is a mark of how deeply imbued the connection between hospice and death is in our society that it has taken me many years to understand the extent to which the hospice benefit is really about living and not about dying.

Planning health care around one's life is not a new idea. Families plan the birth of their children around jobs and vacations and other children. Elective surgery is planned around other life events to assure that their effects fit as well as possible with other activities. Similarly, the media are full of material about planning for one's retirement—perhaps the last period of life. Many of my friends are working diligently to assure that their retirement incomes and savings will be adequate to their needs. But yet, these people, who so carefully plan for an active retirement and for how their estates will pass to their children or other relatives, do not plan for that period when their functioning may be restricted by ill health, but during which they may still be active, in possession of their faculties, and capable of choosing among the alternatives that will affect the quality of their lives.

It is in this area that I believe that the PAL initiative in Connecticut can be most useful. Not just at the time when it becomes mandatory for patients and families to begin planning, but earlier, when they recognize that they will have choices to make and begin to discuss them; earlier, when they begin to do what they need to do to make calm and rational choices.

Choice requires knowledge of possibilities. The law and most systems of morality are based upon both knowledge and choice, and ignorance is not much of a defense if one fails to make a choice when one is offered. Then the choice will be made by others in the "default." People familiar with computers know about "defaults," since this is the term used to define the choice to which a computer program will "default" if the user does not make a choice of his or her own. People with illnesses that limit the time remaining to them and who have failed to learn their treatment options and make their choices use the "default"; they are subject to the choices of others. They have, in fact, thrown their autonomy away.

Over the years, as citizens have learned more about the nature of the forces that affect their lives, they have developed an increased appetite for information and choices—in the labeling of the food they eat and the liquids they drink, in the financing of their homes, and in countless other areas. The mysteries of the end of life remain for many a frontier of ignorance and acquiescence in the choices of others. But there are signs everywhere that this frontier is being breached by better information and the determination of people to take control.

More than any other strength that it has, PAL shows promise of preparing people for the choices they will need to make and enabling them to make these choices naturally and normally in the course of their everyday lives.

I see the PAL program as a program that encourages people to choose life—right up until the end.

What Others are Saying About PAL and Hospice

Medical science is rapidly expanding. Day by day puzzles of human biology are solved and new diagnostic possibilities are realized. Therapeutic options not imagined 25 years ago have become ordinary. However, applying advances in medical science can divert a physician's attention from the person with a disease to the disease as an entity of itself. Molecular biology is beginning to reveal how genes act as switches and motors that maintain normal bodily functions and how we respond to environmental elements that upset our well being. Genes control the mechanisms of cell survival and cell death. Susceptibility to disease is a function of gene structure. Each person has a unique genetic makeup and everyone of us responds to illness in a characteristic and unique manner. Infections and tumors are generate chemicals that activate cells of the immune system to attack and destroy or produce neutralizing substances. Other indigenous chemicals transmit signals that activate immune cells and brain cells. Areas of the brain that determine physical and emotional responses to our environment are linked biologically to the immune system in this way. Although it is recognized that emotional depression lowers resistance to disease, the potential therapeutic value of the relationship between the brain and the ability to combat illness is not yet realized.

The tradition of medical care embodies compassion, empathy, kindness, and respect. These qualities have access to that biologic link that affects response to illness. At a stage of illness when medical science cannot cure with medicines or surgery, care of the person can maximize the quality of life. Hospice care understands the uniqueness of the person/disease interaction. It is an expression of the art of medicine.

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Sacred Ground at the Bedside:
The Hospice Caregiver as Partner of God's Compassion

Sr. ELIZABETH A. JOHNSON, Ph.D.

IN exploring the meaning of the role of the hospice caregiver, a story in the book of Exodus comes to mind. There a crucial encounter takes place between a man minding his flocks and God who wants to free the Israelites from their awful slavery in the land of Egypt Moses, the shepherd, sees a burning bush which is not consumed despite the fact that it is blazing. The voice of God calls to him from the bush: "Remove the sandals from your feet, for the place on which you are standing is holy ground." Moses does so, and then the sacred voice resounds with a magnificent disclosure: "I have seen the misery of my people who are in Egypt; I have heard their cry because of their taskmasters; I know well what they are suffering. Therefore I have come down to deliver them out of that land and bring them into a good land flowing with milk and honey.... So come, I will send you to Pharaoh to bring my people, the Israelites, out of Egypt." Quite taken aback and fearful, Moses objects. But God ends the encounter by saying simply, "I will be with you." The rest, as they say, is history. (Exodus 3:1-12).

In this encounter, a certain patch of ground becomes holy because God is present there, pouring out divine love in the form of compassion for people who are suffering. The verbs used in the divine address from the flaming bush are highly instructive. Rather than being distant and far removed from the turmoil of earth, the Holy One suffers with those who are sore distressed: I have *seen,* I have *heard,* I *know* what they are suffering. *Know,* in this instance, means a knowing in the heart, a felt experience, as when the Bible says that "Adam knew his wife," indicating sexual intercourse. God's own heart feels experientially what the people are going through. And moved by this compassion, God takes action to deliver them, I have *come down,* and does so in a typical way by calling a human being to act as a partner of divine compassion in the world: *Come, I will send you.*

The bedside of the hospice patient is sacred ground for the same reason that the ground around the burning bush is sacred: because someone is suffering, because God is present there and shares this pain, and because the caregiver is called to be a co-partner of God's compassion in accompanying the dying person throughout the time of transition, out of the place of pain. In effect, the voice of God says to the caregiver: Come, I will send you to bring my presence, warmth, and help to these suffering persons in and through your own human heart and expert care.

The term compassion comes from joining the Latin words *cum* meaning *with,* and *pati* meaning *to suffer.* It means to "suffer with" someone; to have a certain fellow feeling that allows you to gain an interior connection to someone else's pain; to enter into a relationship with a suffering person in such a way that he or she feels respected and empowered; simply to stand with someone, recognizing that despite the pain or disfigurement he or she is a person of mystery, beauty, and strength. Through their own compassionate hearts, those who do hospice care have the profound calling of embodying divine compassion, of being the ones through whom God's care is in reality poured out over dying persons.

It is instructive to trace how often in the Bible the compassion of God is imaged in female metaphors. Of course, God is neither male nor female but Creator of both in the divine image and likeness. Since both male and female image God, the experience of both can provide metaphors for speaking about God. But in the course of history, a prejudice against the goodness and blessedness

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and even the full humanity of women titled our language in favor of male images of God. It was thought that a woman's life, her body and emotions, were not worthy to image God. In our day, however, the upsurge in women's awareness around the world is reclaiming the dignity of being female, even before God, and thus female images of God are once again being put into play.

Using female metaphors to speak of God does not mean that God is literally female, just as using male images does not indicate a literal maleness in God. No images are adequate, for the holy mystery of God goes for beyond human ability to comprehend. We use metaphors and analogies simply to point, to say the way God acts and feels and relates is something like this. With regard to suffering, women's experiences of caring and loving provide beautiful language for divine compassion.

One major discovery of recent years has been that the Hebrew word for compassion comes from the same root (rhm) as the word for a woman's womb. When the scripture says that God has compassion on suffering people, the underlying metaphor signals that God is loving them as a mother loves the child of her womb. The prophet Isaiah writes, "The Lord has comforted his people, and will have compassion (womb love) on the suffering ones;" and again, God says, "Can a woman forget her sucking baby, that she should have no compassion (womb love) on the child of her womb? Yet even should she forget, yet I will not forget you." In compassion God is more of a mother than any mother. From an organ of the female body to a physical state: the metaphor suggests the meaning of compassion as self-giving participation in life for the sake of the other whom one helps and protects but does not control. In the New Testament even Jesus, who himself showed such compassion, used the maternal metaphor, telling Nicodemus that a person must be *born* again of water *and the Spirit* in order to enter the kingdom of God. In other words, the Spirit of God is like a mother birthing us into new life.

Another powerful female image of God's compassion is the *shechinah,* or the great Spirit of God who dwells in the world. Mobil and free, she doesn't just dwell there, but accompanies people wherever they go. No place is too hostile. She walks with them through the desert once they have escaped from slavery and, centuries later, she goes with them into exile again, never abandoning them through all the byways of rough times. As the rabbis wrote: "Come and see how beloved are the Israelites before God, for withsoever they journeyed in their captivity the *shechinah* journeyed with them." In other words, God's indwelling Spirit was with them and her accompaniment gave rise to hope and encouragement in the darkness, a sense God was with them to see them through. When the people are brought low then the *shechinah* lies in the dust with them, anguished by human suffering. Even when a criminal is hanged, God feels compassion. As the rabbis write, "When a human being suffers what does the *shechinah* say? My head is too heavy for Me; My arm is too heavy for Me. And if God is so grieved over the blood of the wicked that is shed, how much more so over the blood of the righteous." The biblical understanding that the Spirit of God moves throughout the world to bring life and blessing here receives a special twist in situations of conflict and trouble, God's presence, imaged in female form, embracing those who suffer in this divine compassion is a source of peace, vitality, and consolation in the struggle.

God's compassion, spoken of in female form, becomes embodied in the many women and men who are hospice caregivers. The relationship they set up with patients at the edge of life can be of mutual benefit. The patients are in need; they face the darkness of death and need to feel that they are not abandoned but are enfolded in care. Those who are people of faith also need to feel deeply the nearness of God's compassion. Being carried by God's love, they can believe that their dying opens upon a future where it seems empirically there is no future in this suffering, each patient has the dignity of a human person and can respond in deeply human ways with gratitude, humor, and relief; even merely by being there they have given others the privilege of serving them.

The caregivers are replete with riches to give; their medical expertise relieves pain and soothes jangled bodies, but even more, their own human compassion is the medium that reaches patients at the deepest level of personal need. At the same time, caregivers also have a full range of human emotions that must be respected, including the need to get away or to protect themselves from drowning in too much sorrow. The temptation here, as for other health-care professionals, is to reduce patients to objects, referring to them as a bed number or a room number and forgetting that they are fellow human beings. Hospice principles set up a different idea, asking caregivers to relate to patients on a more person-to-person level in this relationship, both can grow to be more fully and maturely themselves in different ways, provided they honor their own and each other's humanity.

The bedside is sacred ground in the spirit of Hospice, caregivers' work brings them to see and hear and know well what dying persons are suffering. They come to deliver patients from pain, but even more profoundly to share their suffering in a compassionate relationship that sustains human dignity and sees them through the end. In this, they are midwifing persons throughout the "birth" process into the hands of God. They are coworkers with God at a most critical moment of life. Accompanying and giving hospice care to the dying, they image and embody in a beautiful and real sense the infinite mystery of divine compassion.

Enhancing Awareness of Hospice Through Physician Assisted Living: Public Health Perspectives

MICHAEL MERSON, M.D. AND ELIZABETH H. BRADLEY, PH.D.

ABSTRACT—The provision, management, and financing of care for patients with irreversible diseases has become increasingly complex in this era of advanced medical technology. With enhanced capabilities of medicine to prolong life, clinical practice has taken on legal and ethical dimensions that reach beyond the traditional scope of medicine. This paper demonstrates that hospice represents a major area of public health practice and research. It argues for enhanced involvement of public health practitioners and academics in the design and evaluation of efforts to encourage appropriate use of hospice for patients with irreversible diseases. The physician assisted living intervention in Connecticut represents one such effort. However, ongoing educational efforts targeted at both the public and health care providers are needed to ensure that all those with irreversible diseases fully understand and have access to hospice care at the end of life.

THE provision, management, and financing of care for patients with irreversible diseases has become increasingly complex in this era of advanced medical technology. With enhanced capabilities of medicine to prolong life, clinical practice has taken on legal and ethical dimensions that reach beyond the traditional scope of medicine. The nature and pace of such changes challenge conventional wisdom about appropriate care, the role of physicians, and the roles of other heath-care professionals in promoting quality of life for terminally ill patients and their families. Within this context, public heath perspectives can make important contributions to understanding, evaluating, and improving the care of terminally ill patients and their families, as well as the community in which they live. The intention of this paper is to demonstrate that hospice represents a major area of public health practice and research, and that the physician-assisted living intervention is an important step in enhancing awareness of the hospice alternative.

There have been many attempts to define public health. These definitions demonstrate the evolution of a field, continually being reinvented to meet the health needs of the public as knowledge of disease, methods of prevention, and systems of care have evolved in the early 19th century, public health measures focused on enhanced sanitation and reduced communicability of disease. The bacteriologic and immunologic discoveries of the late 19th and early 20th centuries offered disease prevention as a powerful approach to enhancing the health of the public, and prevention became a cornerstone of public health practice populations.[1] In 1920 a more comprehensive view of public health was articulated by Charles E-A Winslow, defining public health as "the science and art of 1) preventing disease, 2) prolonging life, and 3) promoting health and efficiency through organized community efforts."[2] Winslow's view of the field recognized the central role of social sciences in public health and thus foreshadowed the continually evolving nature of the field, changing with the social definitions, expectations, and systems of health. Today, health is defined by the World Health 0rganization as the "state of complete physical , mental, and social well-being." Given this comprehensive view of health, the principles of hospice and the notion of physician-assisted living are wholly consistent with the goals and activities of public health.

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Several aspects of hospice and physician-assisted living are particularly germane to the skills and objectives of the public health professionals. The most fundamental of these aspects is the tenet that the patient and family constitute the unit of care in its founding principles, hospice defines its goal as caring for both patients and their families. This explicit recognition that health is a social phenomenon, and that patients' well-being (or lack thereof) can have profound effects on family and community, broadens the approach of hospice beyond the traditional medical models of health and thus incorporates a public health perspective into the planning and provision of care.

To date, several studies have investigated empirically the effects of hospice care on the quality of life of both patients[3,4] and their families.[5,6] These studies generally demonstrate enhanced satisfaction with care and life among those receiving hospice rather than conventional care.[3,4] With some exception,[7] data confirm that family members and care givers of patients receiving hospice rather than conventional care experience greater satisfaction and reduced bereavement burden after the patient's death.[5,6] Such benefits might be felt throughout a community as survivors are more able to continue their social and productive roles in the larger society. Together, the principles and empirical evidence regarding hospice care demonstrate its commitment to the health and well-being of not only the patient but also individuals supporting and supported by the patient. Such a view of health and of health promotion among families and communities emphasizes the public health nature of hospice.

A second aspect of hospice that demonstrates the relevance of hospice to public health professionals is its focus on the multiple facets of health, including emotional, psychological, and spiritual well-being. Hospice care, with its attention to improving life during advanced stages of irreversible diseases, includes activities beyond the provision of medications and other traditional medical interventions. These activities include active and passive listening encouraging creativity with arts and music, therapeutic touch, and emotional and spiritual healing. Such interventions are central to caring for the whole person, not only the physical manifestations of disease. This integration of physical, psychological, emotional, and spiritual care exemplifies a perspective widely shared in public health practice.

A third characteristic of hospice that is consistent with the public health perspective is the involvement of interdisciplinary teams in the planning and provision of care. Such teams include physicians, nurses, social workers, clergy, and community volunteers who plan, provide, and assess various approaches to care for patients and their families. Similarly, interdisciplinary coordination is a hallmark of effective public health practice. Like hospice care givers, the training and backgrounds of public health professionals are widely diversified including medicine, nursing, law, statistics, economics, and political science, to name but a few. Thus, again, the principles and practices of hospice are consistent with and, in many ways, exemplify the public health approach to caring for terminally ill patients and their families.

While hospice represents the public health approach to care of patients with irreversible diseases, awareness of its potential effect on the health of patients, their families, and the larger communities remains limited. Such limited awareness has been demonstrated directly through national surveys[8] and implicitly through multiple studies demonstrating infrequent discussions among physicians, patients, and families concerning alternative approaches to end-of-life care.[9,10] Nevertheless, public health professionals to date have been fairly silent about their potential embracing of and contribution to hospice and palliative care.

Now is the time to reconsider this silence and recognize the important role of public health in end-of-life care generally and hospice care specifically. The field of public health offers substantial expertise in two areas central to promoting the hospice alternative: the design and evaluation of effective educational campaigns to enhance awareness and appropriate use of such services. Health education has always been important functions of public health professionals. Further, within public health, it has long been recognized that it is not enough to present information.[1] Educational efforts that effect change require an understanding of how individuals and groups view various conditions and how they might be motivated to adapt or alter those views to enhance their welfare. In this way, current public health educators may act as agents of social change.

A public health approach to health education is essential to effecting appropriate patterns of care at the end of life and alleviating what empirical data suggest is common place: deaths that are prolonged, mechanically supported, and painful.[11] A number of educational campaigns to increase public awareness of alternatives at the end of life have been initiated. These include federal efforts to enhance awareness of advance directives through the Patient Self-Determination Act of 1990 (PSDA), as well as the recent implementation of Physician Assisted Living (PAL) in Connecticut PAL is an effort by the Office of the Attorney General to enhance public awareness of hospice principles and to facilitate discussion of hospice care as an option for patients with irreversible diseases. Currently, under the federal PSDA, all patients admitted to health care organizations receive written information concerning their right to refuse unwanted treatment and to complete advance directives. Advance directives are legal documents that describe medical treatment wishes in case the individual becomes unable to make decisions for herself in the future. PAL is an effort to expand the scope of written information received to include the 10 principles of hospice as well as an optional election of hospice, should one become terminally ill in the future.

Will PAL be effective? Evaluation of the PSDA has demonstrated mixed results, with impact on public awareness of advance directives and advance directive completion being measurable though somewhat limited.[12-14] Like the PSDA, PAL will likely have measurable impact on public awareness of treatment alternatives for those with irreversible disease. The effort should be understood as an important step but one that must be augmented with ongoing educational efforts of both the public and health care providers. Given the emotional and ethical dimensions of care at the end of life, successful educational efforts in this area must involve broad and varied perspectives. The efforts must be credible within existing medical systems yet continue to challenge physicians, patients, and families to recognize the many dimensions of health, explicitly recognizing hospice as an option when curative efforts are no longer effective. Public health practitioners and academics alike can make important contributions to these efforts of change.

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The Physician's Role as Care Giver

The American medical community finds itself in the middle of a debate on what the appropriate role should be for physicians at the end of life. Should the physician, like Jack Kevorkian, help patients terminate their lives when life becomes a "living hell," endless torture, a series of painful hopeless days, each one more dreary than the next? Or rather should the physician help the patient within the family to find comfort and maintain dignity by actively managing pain and other distracting and devastating symptoms? When the question is framed this way the choice is obvious: the physician must strive to help the patient maintain a reasonable quality of life in the face of terminal and irreversible illness. After all, we are care givers, not morticians! This is the essence of hospice care: maintaining quality of life!

Myth #1: Hospice care means abandoning the patient.

Reality: Hospice care does not mean that the physician has given up on the patient it does not mean that the patient is foregoing treatment. Rather it sees the patient within her family unit and strives to maximize the quality and comfort of her final days. The earlier hospice care is initiated the more effective the patient's treatment can be. Aggressive pain management is the farthest thing from withdrawing care.

Myth #2: Hospice puts patients in a drug-induced coma.

Reality: Hospice care is not equivalent to a narcotics stupor. Palliative care becomes like drug therapy when it is initiated so late in the disease process that there is little time remaining to affect the outcome. The beauty of hospice care is that it uses so many modalities to enhance patient comfort: art therapy, pastoral care, social work, and trained volunteers.

The PAL initiative, by educating both the physicians and the public about the choices available to them early on in the disease process, will assist physicians in providing high quality end-of-life care to their patients it will make it easier for physicians to initiate a discussion about choices in care modalities and patient preferences for the future. By putting these preferences in writing, confusion among care givers and unwanted medical procedures are less likely to occur.

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A registration statement relating to the securities of Physicians Care for Connecticut, Inc., has been filed with the Securities and Exchange Commission, but has not yet become effective. These securities may not be sold nor may offers to buy be accepted prior to the time the registration statement becomes effective. This notice shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of these securities in any state in which such offer, solicitation or sale would be unlawful prior to registration or qualification under securities laws of such state.

PHYSICIANS CARE
FOR CONNECTICUT, INC.

Physicians Care for Connecticut, Inc. has recently filed a registration statement with the Securities and Exchange Commission relating to the proposed sale of shares of its Common Stock, representing new financing.

Physicians Care for Connecticut, Inc. was incorporated for the purpose of developing and operating a statewide IPA model HMO.

The Company's registration statement proposes the sale by the Company of:

3,000 Shares of Class A Common Stock at $4,000 per Share
and
3,000 Shares of Class B Common Stock at $4,000 per Share

(prices for Shares are subject to a prompt subscription price of $3,000 if subscription documents are received within the first 90 days of the date of the Final Prospectus relating to the offer of such securities)

It is anticipated that these Shares will be available for purchase in July, 1997, subject to the registration statement becoming effective with the Securities and Exchange Commission.

For a copy of a Preliminary or Final Prospectus, please contact the Managing Underwriter, as follows:

Newbury, Piret & Co., Inc.
One Boston Place, 26th Floor
Boston, MA 02108
(617) 367-7300
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Medical Students and Palliative Care

FRANK J. BRESCIA, M.D., FREDERICK A. FLATOW, M.D
WILLIAM SCOTT LONG, M.D., AND SANDRA KLIMAS, M.P.H.

THE United States began the decade of the 1970s without a single hospice. In 1974 America's first hospice opened in New Haven beginning with a home care program. A 44-bed, free-standing hospital[1] was opened in 1980 with eight beds added in 1986. Hospice in North American had finally materialized as a philosophical, social, and medical phenomenon. The mission of this experiment was clear: to develop a program that would fulfill unmet needs for the dying and allow people to die with those basic elements of a good death—care, communication, continuity, control, calmness, and closure.

For hospice care, the goals of therapy are directed toward management of difficult and painful symptoms, not only physical but psychosocial as well. To achieve these goals requires a diverse team with unity of purpose, including nursing, pharmacy, social work, volunteers, pastoral care, nutrition, arts, physical therapy, and physicians. More than two million Americans die each year—90% with a clinical illness and 80% within institutions. The magnitude of the problems for dying patients and their families and friends is obviously enormous. Cancer alone kills one person every minute in our country. Over the years, the Connecticut Hospice has become a resource of care for patients with terminal illness, a body of knowledge, the richness of caregivers' observation, and the lessons learned from listening to more than 35,000 patients and their families. From the beginning, there has been a moral obligation to evaluate how care is delivered, to learn from mistakes, and to address the formal needs of sharing crucial information with a wide range of disciplines—physicians, medical students, nurses, pharmacists, etc. through training, education and research. Motivation and expressions of compassion do not necessarily equate with competency at the bedside. Therefore, to invest in physician participation, documentation, history taking, and patient assessment becomes important. How do we measure and monitor what we do? How do we deliver care in an environment where we know patients will die and where clinical options for cure are limited or nonexistent?

Connecticut Hospice made the decision in 1986 to address the needs of medical students and others (residents, fellows, nurses, nurse practitioners, physician assistants) to have exposure outside conventional hospital settings to help develop communicative skills in dealing with dying patients and their families. Elective programs for senior medical students are listed at the Yale University School of Medicine and the University of Connecticut School of Medicine. Two to four week sessions allow hands-on care of patients and their families and friends dealing directly with the patient's complaints, symptoms, fears, and expectations. The curriculum encompasses pharmacological and other protocols for symptom management that are commonplace with the hospice patient and family. The faculty includes members of the interdisciplinary team.

People who are dying become different and difficult because clinicians treat them differently—many times, with apathy and indifference. At the other extreme there is an inability to address the frustration of perceived failures, and the caregivers fall victims to their own inventiveness in ordering tests, then seeking for a cure that can never

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happen. Principals of good hospice care are no different from those used in other medical care situations: clinical competence, experienced technical skills, and a bedside manner are used to define treatment in the patient's best interest.

A difficulty for physicians is to recognize that point in the natural course of a disease that initiates the dying process, ie, to determine when the patient can no longer be effectively treated with a goal to cure or prolong life. The inexperienced physician learns to ask a series of specific questions as clinical options are reviewed:

- What does this patient and family understand?
- What does this patient and family want?
- What degree of futility is there?
- What and how severe are the patient's symptoms?
- What has been the tempo of progression over the last few weeks or months?
- Can I anticipate how the patient will die?
- What are our reasonable goals?
- Will I make this patient worse by whatever I do?
- What do I do if the patient and family disagree with my recommendations?
- What are the specific ways to involve the patient and family in decisions?

Thinking clearly about our goals for a specific patient is critical when we must optimize the quality of life during the time remaining. Good doctors need to learn the difference between what they *wish to happen* for their patients and what the clinical reality dictates likely *will happen*.

During the students' clinical rotation (see Table 1) at Connecticut Hospice, each one participates as a member of the hospice team in defining the comprehensive plan for each patient and family. This allows the student to witness what a coordinated effort among various disciplines can accomplish in most situations. Beyond the severity of their physical symptoms, patients often have distress that encompasses their spiritual, emotional, and cultural lives. This bridge that unites the humanity of the caregivers and those needing care requires an appreciation of human existence itself.

One of the issues explored with students is the care of patients at home. This is an important part of clinical experience, because, despite the difficulties in keeping patients at home, most patients prefer to die there. Only 3% of relatives of patients who died at home would have preferred the hospital setting.[3] The consistent factor that demonstrates satisfaction by hospice families was the place of death. At Hospice patients can be admitted from home care for control of symptoms and to develop a plan of care, which involves teaching the family, then return home again. Some communities do not have the resources and trained individuals to meet the complex needs of patients with a terminal illness at home. Even those families who want their loved ones at home may not fully appreciate the burden of 24-hour care and may feel abandoned by their caregivers.

How well do we attract younger physicians in this important work and allow them to experience the satisfaction perceived in other areas of medicine? Education and experience in care at the end of life must begin early in the education process. As death is a part of life, and we all hope for quality of life for as long as life lasts, then hospice and palliative care must be a part of every physician's practice. All of us agree that failure to provide proper care at the end of life is no longer acceptable since it abandons ideals that guide the profession. We must provide training now for physicians, patients, and families of the future.

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Table 1.—Two to Four Week Elective Rotation
A. One day general orientation—The entire program is supervised by a full-time, credentialed and privileged physician of the Connecticut Hospice. 1. Introduction to hospice philosophy 2. Introduction to interdisciplinary approach
B. Interdisciplinary team planning 1. Ten Principles of hospice care
C. Individual student learning with preceptor
D. Discussion of selected readings (See Appendix 1 in Bibliography on page 798)
E. Pharmacological interventions in the hospice setting
F. Preceptor/student activities—Hospice inpatient 1. Daily interdisciplinary rounds 2. Weekly interdisciplinary team meetings a. Student presentation of medical and physical history of assigned cases 3. The admission process a. Student participates in admissions 4. Assignment to patients for bedside teaching, communication, identification of problems and symptoms and detailed investigation and research. a. Active participation in patient care, including documentation of orders and progress notes.
G. Preceptor/student activities—Hospice home care 1. Home visits with preceptor to inform student re: our hospice home care environment and care provided. 2. Participation in home care interdisciplinary team conferences. 3. Role of the community physician in hospice home care.

Physician Assisted Living: Medical Educators' Perspectives

GERALD N. BURROW, M.D.

> I feel that it is essential that physicians in training and medical students learn that there is much more to medical care than technology. Hospice lives and breathes unique concerns for human aspects of life and death, and in the months ahead, we will work to find new ways to introduce our trainees to them.
>
> Robert H. Gifford, M.D.
> *Associate Dean for Education and Student Affairs*
> *Yale School of Medicine*

Medical students in general lack education in the process of dying. Technology is available to delay death, but not to prolong meaningful life. Physicians are not sufficiently aware of the opportunities to make the last stages of life more comfortable. Medical students need to have the educational opportunity to learn about these terminal stages.

The Yale School of Public Health is directing a research project on a palliative care and hospice educational program to be developed and delivered by the John D. Thompson Hospice Institute for Education, Training and Research, Inc. in Branford. This has the potential for generating significant interest in the milieu of "end-of-life care." If the results of this educational intervention are positive, it should be replicated throughout the state.

Physician Assisted Living is in its infancy. Interestingly, though, we all knew about it intuitively but never assigned a name to it. We now have the ability, even the calling, to build upon PAL and the educational program to expand it for the medical profession and our medical schools throughout this country.

Gerald N. Burrow, M.D.
Dean Emeritus and
Special Advisor to the President for Health Affairs
Yale University School of Medicine

MARGARET JOHNSON BIA, M.D.

A noted thinker once said that "What we have done for ourselves alone dies with us, but what we have done for others and the world remains and is immortal."

Physician Assisted Living provides a message of hope that is durable and doesn't respect time.

I have the perspective of a medical educator introducing medical students and residents in training to the subtleties of care when cure of the disease seems no longer possible.

What has been missing is an overarching theory or tool that allows us safe passage into the world of our patients using universal language.

Physician Assisted Living is an instrument designed to help the medical professional communicate with patients about their needs. The Physician Assisted Living concept creates a means for each patient, through collaboration with the physician, to view the broadest possible array of care options. Physician Assisted Living becomes the master story, the construct, the framework or set of principles that helps relate to a particular patient's unique set of circumstances: a map of the patient's world at any stage of care.

I have observed the caring of The Connecticut Hospice's Interdisciplinary Team approach since its inception. Not surprising then, that this concept, Physician Assisted Living (PAL), was birthed through the energy of will and commitment of soul demonstrated therein.

For medical students, residents in training, and practitioners, the challenge is to care for the whole patient—not just treat their diseases. Total care involves a seamless path between life and death—both processes of equal importance. PAL is a way that allows physicians to care for patients with this perspective—preserving dignity, hope, and caring for the needs of the whole patient.

Margaret Johnson Bia, M.D.
Professor of Medicine
Yale University School of Medicine

Commentaries

The National Legislative Perspective

In recent years, public discourse surrounding the issue of medical care for the terminally ill has been dominated by the issue of physician-assisted suicide. Unfortunately, missing from this national dialogue has been a discussion of the alternative of hospice care. I am grateful to have this opportunity to express my strong support for Connecticut's recently-launched Physician Assisted Living (PAL) Partners Initiative, which is designed to educate Connecticut's citizens about the choices available to them when faced with a terminal illness.

Recent advances in medicine that have saved or extended countless lives have also increased the numbers of patients faced with prolonged illnesses. Hospice care offers individuals for whom a cure is no longer possible the opportunity to live the remainder of their lives in a supportive environment under the care of specially trained medical professionals. Unlike traditional hospital care, which is directed primarily toward curing or ameliorating illness, hospice services focus on managing pain and providing psychological, sociological, and spiritual support for patients and their families. However, despite the tremendous benefits that hospice services can provide to those who chose them, many patients, families, and even providers remain unaware of the existence of these services.

The principles of hospice care are grounded in the belief that individuals should have the right to make their own decisions about the type of care they would wish to receive when confronted by a terminal illness. The PAL program will help support this decision-making by educating Connecticut residents about their options for end-of-life care. Through this program, state residents will be informed about the availability of hospice care and can receive a document, to be signed and delivered to their doctors, explaining their desire to receive hospice care in the event of terminal illness. This allows patients the opportunity to think about alternatives and commit to them in writing prior to such time as they become incapacitated.

I am proud that the first hospice established in the nation was in Connecticut. PAL continues our proud tradition of compassionate care.

Christopher J. Dodd,
Senator

The Helping Hand from Hospice

There clearly is a profound and important value that underlies the work that Hospice does. It is that this great gift of life that God has given us goes from the very beginning to the very end, and from the very beginning to the very end is sacred and deserves the kind of love and respect and compassionate care that is provided here at Hospice.

In its way and in a marvelous affirmation, I think Hospice, as it helps people approach the end of life, really pays tribute to life in as meaningful a way as I know. All of us have been or will be touched by it. Each of us has our own special memories, and if I may take the liberty of being personal, when my father of blessed memory was in his last days, I can remember so clearly his effort to maintain his dignity, to continue to remain involved with the rest of us in the family. In conversation I remember also the wonderful home care we received at that time through Hospice, which helped my dad to do all of those things. It was care given in a most respectful way, it was care given in a way that preserved his dignity and, although he was weakened, preserved his strength. I shall never forget it, We in the family, thanks to Hospice, and also thanks to my dad, really felt that he was with us to the very last second of his life.

As we improve our health-care system, it is critical to remember, hold dear, and enact the values that are reflected in this hospice program: the underlying belief in the sanctity of life from the beginning to the end, the importance of caring, and the quality of care; it is important to remember that we are people trying to help people.

Joseph I. Lieberman,
Senator

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Appendix 1.—Helpful Reading in Palliative Care

Books

Doyle D, Hanks GWC, MacDonald N: *The Oxford textbook of palliative medicine.* Oxford Medical Publications, Oxford, 1993. The gold standard in palliative care in the English-speaking world (and probably elsewhere).

Saunders C, Sykes N: *The management of terminal malignant disease,* 3rd ed: Edward Arnold, London, 1993. A shorter view with some excellent insights.

Twycross R: *Symptom management.* Radcliffe Medical Press, Oxford, 1995. (A rather cut and dried approach from one of the founders of the English hospice movement but will give you a quick access to at least one medical approach with an emphasis on pharmacology).

Articles and book chapters

Breitbart W: Psycho-oncology: Depression, anxiety, delirium. *Semin Oncol* 1994; 21:754–69. (Excellent guide for practitioners).

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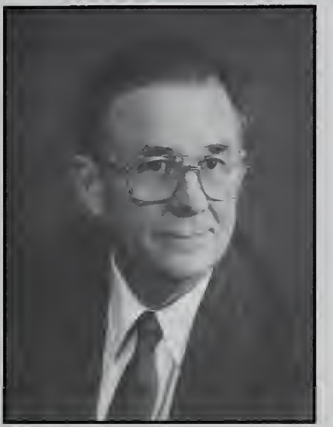
Address of the President to the House of Delegates



The mid-point in my term as president seems an appropriate a time provide you with my view of the state of the State, our accomplishments, and our concerns and expectations.

There is no question that this past year has seen the culmination of literally years of interaction with the state legislature, its leadership, the governor's office and various state departments, particularly Public Health and Insurance.

This morning many of you were able to attend the seminar on Legislative Relief and Practice Options in Managed Care. Among the speakers was insurance commissioner George Reider. I am sure you found his comments to be enlightening and reassuring.

Interaction with Commissioner Stephen Harriman and the Department of Public Health continues to be cordial and productive. He has suggested joint participation with us in educational programs on issues affecting the public health, and we of course have indicated our enthusiasm for such joint efforts.

There is no question that the passage of the managed-care bill has been of vital importance to the patients of this state and to us, their physician advocates.

The growth in the various types of managed-health programs has literally changed the face of medical economics in the United States. In just four years, from 1993 through 1996, indemnity plan coverage decreased from 48% of all covered lives to 23% by the end of 1996, a greater than 50% change in that type of coverage. Conversely, the growth in health maintenance plan coverage has increased from 19% to 27% and point of service plans from 7% to 19% over that same time period. The "So what" you all most probably know but I cannot help but mention. Most directly affected by these seminal changes in the reimbursement of health-care delivery and the actual delivery of the care itself are the chronically ill and the elderly. For our nation's seniors, the intense focus on efficiency and short hospital stays may be necessary for institutions to compete and survive, but these changes may prove especially daunting to our elderly who many times feel betrayed by the high-tech, no-longer-so-compassionate hospital environment. While numbers are elusive and the scope of the problem difficult to quantify, anecdotal evidence abounds, gleaned from tales of social workers, medical advocacy groups, and hot-lines whose phones ring off the hook with the halting, sometimes tangled complaints of the gray generation. It is our moral and ethical responsibility as healers and patient advocates not to contribute to the mental and physical anguish that some of our patient population has been forced to endure.

For our chronically ill patients and low income population the tale is even grimmer. Any type of insurance at all remains an elusive, sometimes unattainable goal for too large a portion of the population. There are estimates that upwards of 45 million people will be without health insurance by the year 2002. The recent federal action to fund health coverage for uninsured children acknowledges the problem without really solving it.

Admittedly the costs of providing medical care to our population has risen if not exponentially, at least at a rate substantially higher than several of our widely employed economic indices. I will continue to hold the belief that in great portion these increases in cost may be substantially attributed to the tremendous technological advances made by our profession over the past several decades and, not in the least less important, improvement in our ability to deliver that technology and knowledge to an ever greater number of our patients. At this juncture to see the vast amounts of monies diverted from medical-care delivery into the seemingly insatiable maw of entrepreneurial profit cuts to the quick.

But managed care and its organizations are here to stay and they are playing a hugely significant role in shaping our future health-care delivery system. All the more encouraging then is the passage of the managed-care reform bill, in overwhelming fashion by the state House of Representatives, the state Senate, and signed quickly into law by the governor. Managed-care organizations are defined as insurers, health-care centers, hospital or medical service corporations, or other organizations delivering, issuing for delivery, renewing, or amending any individual or group health managed care plan in this state.

The insurance department and insurance commissioner have been given oversight responsibility in regard to the managed-care law. Managed-care organizations, (MCOs), must annually submit to the Department of Insurance a report on a quality assurance plan addressing enrollee complaints; prior authorization denials; utilization review determinations; a model contract in force with its providers; a declaration of the types of financial arrangements existing with hospitals, providers, and utilization review companies; and a summary of credentialing procedures.

The law assures that practicing physicians will have input into the development, modification, and implementation of medical protocols. Gag clauses are prohibited, allowing physicians to discuss any and all treatment options and even methods of reimbursement There is protection preventing retaliation against providers who help contract members appeal utilization review decisions and a grievance procedure allowing enrollees to seek review and timely resolution of complaints arising from a managed-care company's action. There will be an expedited review process to deal with life-threatening situations precipitated by ill founded decisions of utilization review companies that jeopardize the medical management of these conditions.

Also created is an external appeal process provided to the patient who has exhausted all other appeal modalities.

Finally, the insurance commissioner will submit annually to the governor and the General Assembly a report summarizing the department's review of MCO activities included in the bill.

How these regulations are implemented is always a concern, but certainly at this point there is room for optimism.

With the advent of managed care and the entrepreneurial environment it has fostered, there has entered our sphere another manifestation of medical economics, the practice management organization. The lure is to lessen our administrative burdens and provide access to capital sources and practice management expertise allowing us to "practice more efficiently and more cost effectively." Thus our attractiveness to the various entities seeking to utilize our medical expertise is enhanced. Attractive, they sound good, after the mind-numbing exhortations of our managerial economics partners—apparently too good to a growing number of physicians in our state, as well as individuals, groups, and IPAs nationwide. So with your forbearance I would like to inject a note of caution. I believe it is part of our mandate as leaders of organized medicine in the state to speak out and provide appropriate cautionary notes to our colleagues subjected to the siren call of these various entities. Most obviously in this case, the so called PPM (physician practice management company) is capitalized through our equity markets and so is responsible to those equity markets' stockholders. If expectations of return on investment, some say as high as 25%, are to be met and the savings and efficiency in reducing practice overhead are in the range of 5% to 10%, then it follows that maintaining the desired revenue stream will fall to acquisition of new risk contracts and to physician performance enhancement. Please do not interpret my comments to suggest that anyone in a PPM contract is in league with the devil. I merely wish to inject a strong note of caution. Those contracts you are asked to sign are generally long-term. In just the past several weeks we have been regaled by the merger antics of two of the most active PPMs in Connecticut. Our managed-care environment has not yet matured. As it does, and as earnings ratios drop, the ability to show gain will become more problematic. The "suits" move on. You remain—with your patients.

A managed service organization (MSO) does provide an option that we at the State Medical Society endorse as a viable alternative. In providing the benefits of more effective billing and collections, economies in purchasing supplies and equipment, sophisticated information systems, and leverage in negotiating favorable contracts, many of the advantages of the PPM are matched. Of greatest importance is governance, and in these situations local physician control is absolute in the MSO model. You can expect community focus and an orientation toward long-term community commitment. **You all know we are sponsoring such an organization.** I ask you to spread the word to associates and friends, and for your own benefit give Michael Deren and James Darnell and MD Advantage a look—before you leap.

The Connecticut State Medical Society is not and should not be all about economics. As the new legislative session begins there are bound to arise new and renewed assaults on our sphere of practice. Encouraged by an attitude of leniency for political expediency the so called alternative care providers as well as the more traditional allied health groups seek ever to expand their scope of activity, disclaiming any negative impact on the quality of life and health of our constituent population. Indeed some broadly proclaim expertise and procedural success with no discernible credentialing in evidence. Recently CSMS has had to oppose an initiative for laser use completely outside a medical setting.

Regrettably, we can expect renewed efforts by the Connecticut nurse practitioner group to expand their nursing activities beyond the limits currently imposed by state statute. In this regard it is important to understand that advanced practice registered nurses are at this time permitted to practice an advanced level of nursing and prescribe medical therapeutics as long as they have entered into a mutually agreed upon protocol with a directing physician. It is not just a political but an ethical and legal concern to remind ourselves that as physicians having entered into such protocol agreements we are obligated to appropriate supervision of these activities.

The Council has endorsed a document jointly developed by the Medical Legal Committee of the Medical Society and the Connecticut Bar Association entitled Principles of Cooperation in Medical-Legal Matters. This is the culmination of years of effort by New Haven County, Hartford County, and Fairfield County to develop guidelines to assist both physicians and attorneys in dealing with each other and the courts when such interaction is required. While of course the material contained therein does not have the force of law, it nevertheless represents a good faith effort by members of the Bar and the Society at collaboration in a document of potential benefit to both organizations and the public we serve.

It is my pleasure to announce an initiative by the Society and its Committees on Public Affairs and Legislation to proceed with an informational, educational campaign entitled "The MD Makes a Difference" Dr. David Parke developed this theme during his work with the American Academy of Eye Physicians. Special interest groups continue to infringe upon the scope of our practice and the public health. As professional distinctions are increasingly blurred in the public perception, we can no longer afford to presume that anyone is aware of the commitments and sacrifices made by each one of us in achieving the degree of doctor of medicine. This campaign will focus attention and seek to inform and educate everyone it touches as to the dedication and effort required in the degree's attainment. The target of the campaign is the public, the media, our lawmakers. We intend nothing less than to educate our constituency to the issues involved and the decisions to be made in choosing those who will provide that most vital of service—their health care.

Stanley J. Keating, Jr , M.D.
President

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REFLECTIONS ON MEDICINE

When the Time for Heroics Has Passed

ROBERT U. MASSEY, M.D.

> Many have studied to exasperate the ways of Death, but fewer hours have been spent to soften that necessity.
>
> *Sir Thomas Browne*

PHYSICIANS have never quite known how to behave at the bedside of their dying patients. It may even have been harder 30 years ago before our amazing life-extending (or dying-extending) technologies were available to keep us busy. I knew a distinguished endocrinologist who, when his patient took her last breath as he stood by, seemed embarrassed, crossed himself, bowed slightly, and backed out of the room. Sometimes in those far off days we would call for an epinephrin-filled syringe with a long needle and aim it at the precordium, empty it, and wait. In my experience nothing ever happened, but we could leave feeling that we had done our best.

Now hospital deaths are often wild, a confusion of unfeeling, but well-meaning, noisy busyness in the ICU, nurses and housestaff standing by or manipulating tubes, defibrillators, respirators, or just watching the monitor as someone forcibly and rhythmically compresses the chest. Hardly the *euthanasia*, the peaceful departure, the good death that the ancients wished for themselves and their families. Daniel Callahan wrote of the "wild death," earlier described by Philippe Ariès, and now so common in our hospitals:

> It is wild not simply because it is out of control and terrorizing in its modern incarnation, but also because, in the name of combating mortality, it has managed simultaneously to subvert the institution of medicine, which cannot overcome mortality, and the morality of human decisions about life and death, which should not have to bear the burden of omni-responsibility.[1]

Callahan hardly intended to deny anyone the right to choose the wild death, "... technological brinkmanship without restraint, aiming to go as far as medical aggressiveness will allow," but that he should know and be prepared to accept "risking a terrible death—a risk for himself but also for those who must care for him."[2]

In discussions with older men and women, those mostly well beyond the Psalmist's three score and ten, I have found an almost universal fear—even terror—that instead of that peaceful death that nature so often provides, they will be pummeled by EMTs, delivered to the ER, and then rolled away to the ICU with absolutely no choice in the matter, and spouses or children powerless, or not aggressive enough, to intercede. Over and over I hear of living wills ignored, especially when they could not be produced on the spot. One elderly man thought he might have DNR tattooed on his forehead! More than this, many are concerned that in the helplessness of their final illness they will be subtly urged by well-meaning families and physicians to have just one more round of chemotherapy or radiation, or will be cheated out of a quiet death from pneumonia. I recall a wife and her two sons, both ministers, blocking the hospital room doorway of her husband and their father, near death from leukemia, for whose pneumonia a resident had, not inappropriately, ordered antibiotics to be given. They won the standoff, but only because they were able to reach the patient's physician and friend by phone. The patient died a peaceful death 24 hours later, and the resident sulked.

Leon Kass writes that our urge to medicalize death is *hubris* and reminds us of the tragic fate awaiting those who succumb to this all-too-human fault. "We do not understand that the project for the conquest of death leads only to dehumanization, that any attempt to gain the tree of life by means of the tree of knowledge leads inevitably to the hemlock...." and that "the victors live long enough to finish life demented and without choice." He concludes:

> The present crisis that leads some to press for active euthanasia is really an opportunity to learn the limits of the medicalization of life and death and to recover an appreciation of living with and against mortality. It is an opportunity to remember and affirm that there remains a residual human wholeness—however precarious—that

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ROBERT U. MASSEY, M.D., Professor Emeritus, Division of Humanistic Studies, Department of Community Medicine and Health Care, University of Connecticut School of Medicine, Farmington.

> can be cared for in the face of incurable and terminal illness. Should we cave in, should we choose to become technical dispensers of death, we will not only be abandoning our loved ones and our duty to care; we will exacerbate the worst tendencies of modern life, embracing technicism and so-called humaneness where encouragement and humanity are both required and sorely lacking.[3]

Over 170 years ago, a medical student at Göttingen by the name of Carl Friedrich Heinrich Marx wrote his doctoral thesis, *De euthanasia medica*, "Medical Euthanasia,"[4] by which he meant, not the active euthanasia, the killing that many are demanding as an alternative to a wild medicalized death, but rather the passive good death, the peaceful death of skillful palliation that today defines hospice care. Almost two centuries ago this newly minted *Med. et Chir. Dr.* from his ancient university in Brunswick reminded his fellow academics of that "great Englishman," Francis Bacon, who had written 200 years earlier urging physicians "to stay with the patient after he is given up,…" and "to acquire the skill and to bestow the attention whereby the dying may pass more easily and quietly out of life."

Marx's recommendations were strikingly similar to the principles of hospice care today; he would have understood, as perhaps would Bacon, the notion of physician assisted living (PAL) during life's final exit. "Most physicians," he wrote, "once they see the expected result of their treatment to be wanting,… start to lose interest themselves." He even mentions a program at Heidelberg headed by a Prof. Mai, and funded by Amalia, Duchess of Baden, that provided training to women attendants in caring for the sick and the terminally ill. Marx recommended that these caregivers be "considerate, watchful, quiet, clean, free of prejudice toward people,… and adhere to the doctor's orders with greatest obedience." He described the care of bedsores, and that the "doctor will with his own eyes repeatedly search for" them.

Marx asked, "What good will it do the incurable patient to apply dangerous and dubious therapeutic measures? The entire plan of treatment will here confine itself within 'symptomatic and palliative medication.'" He even reminded his physician colleagues to see that the patient's dry tongue and pharynx be moistened. He urged "soothing, soporific, sedative, analgesic" medicines, and noted that "… narcotics are of enormous help." But later he added the essential caveat, "… and least of all should he be *permitted* (italics mine), prompted either by other people's requests or by his own sense of mercy, to end the patient's pitiful condition by purposely and deliberately hastening death. How can it be permitted that he who is by law required to preserve life be the originator of, or partner in, its destruction?"

In Marx's brief thesis, written in 1826 upon his being admitted to the faculty at Göttingen, we can find all the principles of hospice care and of physician care at the end of life embodied in the PAL program. Nothing new here. But even he was not their originator; we find them not only in Bacon, but in the ancients—Pliny, Cicero, Seneca, the Bible. They are imbedded somehow in our nature, and even, as Lewis Thomas once suggested in nature itself: why else the endorphins? Concerning them he wrote, "If I had to design an ecosystem in which creatures had to live off each other and in which dying was an indispensable part of living, I could not think of a better way to manage."

But when endorphins are not enough for the kinds of nonviolent, prolonged deaths that we often produce and must endure, we have the means and the inherent mercy to ease the passage. We should pay more attention to the business of dying. My Harrison's *Principles of Internal Medicine* devotes one and one half pages out of 2,044 to this matter, but it does address the physician's role: "First of all, the patient must be given an opportunity to speak to his physician and to ask questions."

This is what the PAL program as a part of the advanced directive is all about. It frees patients who are prepared to plan for the inevitable event to consider the options, discuss them with their physicians and families, choose, and then say with Seneca: "I am ready for death, hence I may enjoy life."

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MEDICAL NEWS CAPSULES

This Month's Reading in Review

TIMOTHY B. NORBECK

The claim of HMO CEO David Lawrence that "the most appropriate care is the least expensive care" is an excellent illustration of why the public doesn't—and shouldn't—trust HMOs [*Are HMOs the Right Prescription?* 13 October]. Of course, the most appropriate care is often not the least expensive care. The most appropriate care for cardiomyopathy is often a heart transplant. The most appropriate care for advanced breast cancer is often a bone-marrow transplant. This isn't the least expensive care. It's cheaper to give only palliative care and to 'allow' the patient to die."

From a letter from a professor of philosophy at Brown University in *U.S. News & World Report* (10 November 1997)

A recent editorial in the *Los Angeles Times* notes that public "negativity" about the managed-care industry "could slow the expansion of managed care."... The editorial recommends that "HMOs would be wise to work on their image," specifically by endorsing "an industry-wide patient bill of rights."... It further criticized the HMO industry for launching a media campaign to turn public sentiment against such rights, noting that the message is not getting through.

Los Angeles Times (7 November 1997)

"We've got to do something to restore consumer confidence. Every time I go to dinner parties and say I'm an HMO executive, I get an earful ...We're getting nickeled and dimed to death by the Disease of the Month Club."

HIP executive David Abernethy, in referring to HIP, Kaiser Permanente, and the Group Health Cooperative of Puget Sound support of patient protections in the *Wall Street Journal* (17 November 1997)

"Employees need a choice of plans to encourage competition in the health-care industry.... But under current Federal law, states cannot force most large employers to provide such choices. Only Congress can impose these rules."

From a lead editorial in the *New York Times* (5 November 1997)

Say What?

A mock news release declares that in response to Justice Department antitrust charges, "Microsoft Corporation announced today that it will be acquiring the federal government."

Wall Street Journal (31 October 1997)

"This battle (over controlling fraud in Medicare) is really over differing answers to the question "How many CPAs can dance on the head of a syringe?" What's lost in all the bureaucratic and legal mumbo-jumbo is a fact that's far more damaging to our nation's health care system: It's too difficult for doctors to do their jobs well while at the same time coping with a proliferating web of fraud-fighting regulations."

Philip R. Alper, M.D. in the *Wall Street Journal* (5 November 1997)

"Are the AARP and other lobbies for seniors misrepresenting their members when these organizations oppose higher premiums for the affluent as a way to save Medicare? It certainly looks like it, judging from a recent poll by the *Los Angeles Times* that found the higher premiums were supported by 59% of respondents 65 or older and opposed by only 32%.

Charles Peters in the *Washington Monthly* (November 1997)

"The number of Americans living with diabetes has increased sixfold since 1958 to the highest level on record, and one reason is that people are too heavy."... The Centers for Disease Control and Prevention reported in late October that more Americans than ever before are suffering from diabetes, with the number of new cases averaging 798,000 annually.... Currently, 15.7 million people in the United States have diabetes, nearly 6% of the population.

Washington Post (31 October 1997)

Only in America: A convicted murderer, serving a life sentence in Massachusetts, told the *Boston Globe* that he would soon legally register an inmates' political action committee to dispense money to candidates and give the incarcerated a stronger voice in state elections. (Prisoners can vote in Massachusetts.)

Boston Globe (20 October 1997)

TIMOTHY B. NORBECK, Executive Director, Connecticut State Medical Society.

Letters to the Editor

Letters to the Editor are considered for publication (subject to editing and abridgement), provided that they are submitted in duplicate, signed by all authors, typewritten in double spacing, and do not exceed 1-1/2 pages of text (excluding references). They should not duplicate similar material being submitted or published elsewhere. Letters referring to a recent Journal article should be received within six weeks of the article's publication.

Board Certification Revisited

Letter to the Editor: The issue of board certification and its use by managed-care organizations to restrict the number of physicians admitted to their panels is a serious one. Though some aspects of it and possible solutions have been discussed recently in the literature,[1,2] there are several important components of this problem that warrant further consideration and action.

1. The American Board of Medical Specialties (ABMS) which oversees the 24 member boards that comprise our profession has made it very clear in the introduction to its directory that the boards were never meant to be used by any individual or organization to restrict physicians' abilities to practice.[3] It seems right that as the responsible parent board it should issue an official position statement corroborating this. Not doing so allows managed care organizations to continue to discriminate against the 90,000 American physicians that are not board-certified (about 1,500 in Connecticut). It is the responsibility of the ABMS to make managed care understand that the boards are voluntary examinations which some physicians take to demonstrate that they have passed a test whose standards are higher than those of the state. Much like a professional merit badge or a badge of honor, but that they were never meant to guarantee physicians' competence.

2. Our CSMS has not been vocal or forceful enough in speaking out against this issue. Some physicians who are not board-certified wonder why this issue has not been pursued more enthusiastically. I suspect that most physicians on our political committees are board-certified and not directly affected. Therefore they are not attacking it as vigorously as they should. Perhaps some physicians do not speak out because they believe that eliminating non-board-certified physicians' participation on managed-care panels protects their own financial interests. And there may be others who feel that having passed their boards, they have "paid their dues" and believe that their colleagues should fend for themselves. There may even be some board-certified doctors who believe that having the boards makes them superior to those who don't, and for that reason alone refuse to defend their colleagues. A fine state of affairs indeed if physicians have allowed their jealousies and turf battles and competitiveness to get to this stage! If so, then the profession has a more serious morale problem than most of us imagined and it just might be impossible to rally and break managed care's grip. Those who are not board-certified need to see a show of concern from those who are. And besides, what example are we setting for medical students and residents? What must their impression be of a generation of physicians who cannot muster enough courage to defend their colleagues when they need them the most?

3. It is not entirely unreasonable that managed-care organizations may require some new type of certification. Whatever form is finally decided upon for these certifications is still unknown. But if new ones are developed they should eliminate the inefficiencies of the current ones. For example, some recertifying examinations are quite expensive. Some doctors recently received their applications for recertification in Family Practice. The examination fee is a hefty 700 dollars.[4] That, and losing a day or two from the office, traveling to another city, and paying for hotel accommodations, will eventually end up costing some of them a few thousand dollars. The time and money and inconvenience involved is considerable. But some of these problems could be solved easily. For example, boards or other new certifications that are introduced could be given in the communities where physicians practice, preferably in their local hospitals. This alone would be a tremendous time and energy-saving convenience.

In summary, using the boards to discriminate against physicians is mean-spirited. It is wrong in principle and no amount of rationalization will ever make it right. Unfortunately the American Board of Medical Specialties has been silent on this issue. Therefore it is the responsibility of the Connecticut State Medical Society to bring it to our legislators.

Edward J. Volpintesta, M.D.
Bethel

[See related resolution, p. 808.—ed.}

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From the Executive Director's Office

SUMMARY OF PROCEEDINGS
CSMS HOUSE OF DELEGATES — SEMI-ANNUAL MEETING
RAMADA INN, MERIDEN—12 NOVEMBER 1997

Reports and Addresses

The House received reports, addresses and/or remarks from the president, the Council, the AMA Delegation, the executive director, Connecticut Medical Political Action Committee (COMPAC), Connecticut Medical Insurance Company (CMIC), and CSMS-IPA. Most of the reports were published in the Handbook previously distributed to the delegates. The report of President Dr. Stanley J. Keating, Jr. and of Executive Director Tim Norbeck appear elsewhere in this Journal.

PRINCIPAL ACTIONS TAKEN

(a) *Report of the President,* Stanley J. Keating, Jr., M.D., Hartford. Dr. Keating gave a comprehensive report based on the Revolution in Medicine and how CSMS can help physicians respond to it and how CSMS itself should respond to today's challenges and changes. The report appears in its entirety in this issue of *Connecticut Medicine* as the President's Page. The report was accepted as information.

(b) *Report of the Council,* Joseph S. Sadowski, M.D., Hartford. The House voted to accept, as information, the report of the chairman of the Council, which reviewed the activities of the Council since the last meeting of the House of Delegates. Minutes of the interim Council meetings have already been published in *Connecticut Medicine*. Special emphasis was given to the reports from related organizations such as MD Advantage, CMIC and CSMS-IPA; the various reports given at each meeting by the president, the executive director, and the chairman of the Committee on Legislation. The Council reported its approval of the "Principles of Cooperation in Medical-Legal Matters" which were developed by the Liaison Committee with the Connecticut Bar Association. The Council also submitted a budget for 1998 and the action taken on the Council's recommendation also appears elsewhere in this summary.

Because of the resignation of Jerome K. Freedman, M.D., the Council elected Frank J. Scarpa, M.D., Greenwich, AMA Delegate to fill the unexpired term of Dr. Freedman. In accordance with CSMS bylaws, the House voted to approve this appointment.

(c) *Report of AMA Delegation,* Edward A. Kamens, M.D., Fairfield. The House voted to accept the report of the AMA Delegation as information. The report contained the principal actions taken at the 1997 Annual Meeting of the AMA House of Delegates. It was reported that the restructuring of the AMA had begun and that the term of office of members of the Board of Trustees has been expanded to four years and limited to two terms. Legislative high points were discussed and Connecticut was singled out for what it has been able to achieve on issues of interest to physicians in the Connecticut Legislature.

Over 400 resolutions were reviewed dealing with such topics as managed care, delays in payment, not notifying the physicians under the capitation system when patients have been added to their list, funding for insurance and individual ownership of insurance assisted living, medical care for legal immigrants, laboratory studies, rural health care, modification of antitrust regulations, campaign finance reform, medical records, development of universal CPT coding, if possible, etc.

(d) *Executive Director,* Mr. Timothy B. Norbeck, New Haven. The House voted to accept the report of the executive director as information and it appears in its entirety at the conclusion of this summary.

(e) *Connecticut Medical Political Action Committee (COMPAC).* Roger S. Beck, M.D., Wethersfield, chairman of the Connecticut Medical Political Action Committee, gave an update on the current status of COMPAC. He reported that membership has decreased from 712 to 608. This is less than 10% of the membership. COMPAC provides various levels of support to candidates who are supportive of organized medicine's issues. COMPAC-sponsored Legislative Guides were sent to every member of CSMS to utilize during the state and federal legislative sessions.

(f) *Report on Connecticut Medical Insurance Company, (CMIC).* Sultan Ahamed, M.D., president and chairman of the Board of Connecticut Medical Insurance Company (CMIC) reported the following:

1. CMIC's Board of Directors declared CMIC's seventh consecutive and largest policyholder dividend ever of $2.5 million. The 1998 dividend distribution will result in at least an 8% premium credit for most CMIC members. The dividend is applied as a premium credit to members at renewal in January. Combined policyholder repayments now total 20.0 million.

2. In 1998, members in some risk classes will see a modest rate increase, others will have their risk class reduced and some members will see no change at all.
3. It was noted that some members look at the premium and go on to other companies, however, what they lose sight of is the claims staff's presence and strong support throughout the claims resolution process, but especially at the time of trial. Physicians have expressed their appreciation of this support.
4. CMIC has established a relationship with 16 law firms in Connecticut and several in contiguous states. All firms are reviewed for suitability and each has confirmed that they do not sue physicians for medical malpractice.

(g) *Report on CSMS-IPA:* Dr. David D. Thompson, Jr., M.D., president, reported on current activities of the IPA and his complete report appears at the end of this summary.

(h) *1997 Budgets:* The House voted to approve the operational budget, a capital budget and a Physician Health and Education Fund Budget. The dues will remain at $390.

(i) *New Business:* The following individuals were granted the privilege of the floor.

1. Craig C. Czarsty, M.D., Oakville, made a presentation on Physicians Care for Connecticut, Inc., a statewide physician-owned and directed insurance company licensed as an HMO. Presently the company is a wholly-owned subsidiary of MedServe of Connecticut, Inc. Copies of the prospectus were distributed to the delegates.
2. Michael M. Deren, M.D., New London, gave a brief report on the CSMS MSO, M.D. Advantage, and introduced Mr. James Darnell, the CEO of M.D. Advantage.
3. Mr. James Darnell, CEO of M.D. Advantage reviewed for the delegates two key findings of the CSMS feasibility study. First, physicians did not have extra money to invest or financially support HMOs, IPAs, MSOs, or other ventures. The CSMS MSO has taken this into consideration and has identified a strategic partner that has totally funded the project. The second issue that arose from the feasibility study was that physicians wanted to remain independent, therefore, purchasing services from the CSMS MSO as opposed to being acquired—at best they wanted a strategic partner that could provide contracting expertise, management information system capability, and management. He stated that the CSMS M.D. Advantage mission is to develop and operate sustainable health-care delivery systems.
4. Joseph Zeppieri, M.D., Groton, associate councilor from New London County, brought to the attention of the House a recent accident that took the life of Dr. Mark E. Quigley of Suffield, vice-president of ambulatory services and chief of the emergency department at Johnson Memorial Hospital in Stafford. Dr. Quigley was hit by a car on his way to aid a car accident victim. It was voted to commend Dr. Quigley for his exemplary act and to inform his family of this commendation.

(j) *Twelve resolutions were adopted, some with amendments and are published herewith:*

Minimizing the Time It Takes Managed-Care Companies to Credential/Recredential a Physician

(Introduced by Fairfield County Medical Association)

RESOLVED, that the Connecticut State Medical Society shall seek passage of a bill that would require all managed-care companies to complete the credentialing/recredentialing process, and inform the doctor of its decision concerning acceptance/re-acceptance, within 90 days after certified receipt of applicable documentation from the physician.

Dangers Caused by HMO Drug Formularies

(Introduced by Fairfield County Medical Association)

RESOLVED, that the Connecticut State Medical Society advise the Legislature of the confusion and dangers caused by HMOs compelling doctors to use only drugs listed in the HMO's formularies because potentially it endangers patients' health; and be it further

RESOLVED, that the Connecticut State Medical Society convince the Legislature of the urgent necessity of preventing HMOs from coercing physicians into utilizing only the approved drugs on the HMO formularies; and be it further

RESOLVED, that CSMS restate the principle that physicians are responsible for optimal patient care; that mandatory HMO formularies undermine such care; that CSMS supports legislation to prohibit mandatory formularies.

Prohibit HMOs from Using Board Certification as a Singular Criterion for Nonacceptance on its Provider Panel

(Introduced by the Fairfield County Medical Association)

RESOLVED, that the Connecticut State Medical Society shall, through its Legislative Committee, seek legislation to prohibit HMOs from using board certification (or board eligibility) as a criterion for rejecting or terminating physicians from its physician panels.

Payment for Physician Case Management Services

(Introduced by Fairfield County Medical Association)

RESOLVED, that the Connecticut State Medical Society refer to the Liaison Committee with Medicare the appropriateness of automatic refusal by the Medicare intermediary to pay for case management services and other CPT-coded services for which there is now no recompense unless the physician provides detailed documentation describing the nature of the service.

Lengthen the Duration of the House of Delegates Meeting

(Introduced by Fairfield County Medical Association)

This resolution proposed to extend the House of Delegate' meeting to a full day. The House was informed that a survey was currently being made seeking comments from the delegates concerning various aspects of the House of Delegates' meeting. It was voted to refer this resolution to the Council until the study was completed and report back to the House of Delegates at the annual meeting in 1998.

PAP Smear as a Clinical Laboratory Test

(Introduced by Stephanie Wain, M.D., President,
Connecticut Society of Pathologists)

RESOLVED, that the American Medical Association seek from the Health Care Financing Administration and managed-care groups reclassification of Pap smear screening as a medical consultation; and be it further

RESOLVED, that the AMA seek to remove Pap smear screening from categorization as a clinical laboratory test and seek exclusion of Pap smear screening from clinical laboratory bids proposed by managed-care groups, and be it further

RESOLVED, that the Connecticut State Medical Society House of Delegates supports the concepts in the above resolutions and refers them to the AMA delegation for support at the December 1997 meeting.

Guidelines for Review of PAP Smears in the Context of Litigation

(Introduced by Stephanie Wain, M.D., President
Connecticut Society of Pathologists)

The Connecticut State Medical Society supports the concerns expressed in the following resolution and referred it to the AMA delegation.

RESOLVED, that if the Pap smear is to continue as an effective cancer screening procedure, it must remain widely accessible and reasonably priced for all women, including, those with low incomes and those at high risk.

RESOLVED, that the finding of a false negative smear is not necessarily evidence of practice below the standard of care. Whether a false negative smear is the result of negligence must be judged not only on the basis of the individual result, but also in the context of overall laboratory performance on Pap smears.

RESOLVED, that disputed cases of atypical cells of undetermined significance (ASCUS/AGUS) are not likely to represent reasonable grounds for allegations of practice below the standard of care.

RESOLVED, that Pap smear slides being assessed for possible litigation should be reviewed without knowledge of clinical outcome. This review should stimulate the normal screening situation as closely as possible. This may be accomplished as a screening process including the contested case as one of a number of Pap smears representing a variety of disease states. Review with knowledge of subsequent development of carcinoma biases the objectivity of the review and does not reflect standard practice.

RESOLVED, that a court reviewing the qualifications of proffered physician-witnesses should consider or utilize these prerequisite criteria:

1. The physician maintains a current and unrestricted license to practice medicine in his/her state of practice; and
2. The physician is certified by the appropriate ABMS specialty or subspecialty board, and is fully trained in the practice of cytopathology; and
3. The physician is knowledgeable in the practice of cytopathology as indicated by years of practice experience, current up-to-date continuing medical education, and active engagement in the practice of cytopathology.

Professional expert witnesses who do not have significant experience in cytopathology are not qualified to express an expert opinion on the standard of care.

RESOLVED, that the standard of care should be that of the reasonable and prudent practitioner. Courts should recognize that a false negative result is not sufficient proof of negligence. Rather, they should look to whether the overall Pap smear practices of the laboratory meet the standard of care.

RESOLVED, that compensation of the physician-witness should reasonably reflect the time and effort expended by witness in preparation, depositions, and trial.

Compensation of a physician-witness contingent on the outcome introduces the possibility of bias and should not be permitted.

Education of Medicare Patients Concerning Previously Covered Medicare Services

(Introduced by Fairfield County Association)

RESOLVED, that the Connecticut State Medical Society, through its AMA delegation, recommend that AMA strongly suggest to HCFA that when it eliminates Medicare coverage for services, that an effective mechanism be utilized by government to inform the public, (ie, letter to beneficiaries, notices in newspapers, etc.) about changes in the Medicare program; particularly those making patients responsible for paying for such services.

Reaffirmation of the "Fairness for Patients" Policy

RESOLVED, that the Connecticut State Medical Society shall reaffirm medicine's strong conviction that HMOs should not be allowed to persist in the practice of limiting their provider panels and thereby limiting patient choice, by not accepting all physicians who otherwise meet the credentialing criteria of the HMO, and, agree to abide by the plan's policies and procedures.

Physician Supervision of Nurse Practitioners

(Introduced by Fairfield County Medical Association)

RESOLVED, that the Connecticut State Medical Society strongly supports any initiative to ensure that Advanced Practice Nurse Practitioners continue to provide care under physician supervision and in collaboration with physicians. The Connecticut State Medical Society opposes unsupervised practice of patient care by Advanced Practice Nurse Practitioners and supports adequate physician supervision of Advanced Practice Nurse Practitioners.

Prohibiting HMOs from Using Financial Incentives to Induce Physicians to Adhere to Their Policies for Treating Patients

(Introduced by Edward Volpintesta, M.D., Delegate from Fairfield County Medical Association)

It was voted to refer the following resolution to the CSMS AMA Delegation with the recommendation that they review and investigate this policy and report back to the next House of Delegates meeting with any recommendations.

RESOLVED, that the Connecticut State Medical Society shall rescind its adoption of House of Delegates policy 285.982 (3) of the American Medical Association; and be it further

RESOLVED, that the Connecticut State Medical Society shall publish a position statement making it clear that it opposes the use of any and all financial incentives (ie, withholds, capitation, bonuses, etc.) by HMOs and other insurers which can adversely influence how doctors render patient care and be it further

RESOLVED, that the Connecticut State Medical Society shall transmit for similar action by the House of Delegates of the American Medical Association a copy of this resolution opposing the use of any and all financial incentives by HMOs and other insurers which can adversely influence how doctors render patient care.

Creation of CSMS Managed Care Patient Advocacy Committee

(Introduced by the Middlesex County Medical Association)

RESOLVED, that the Connecticut State Medical Society establish a managed-care patient advocacy committee with the following functions:

—To act as an advisor to physicians in the appeals process created by a substitute House Bill #6883, as amended.

—To expedite quality, access, and fairness.

—To engage the Department of Insurance and the Department of Public Health of Connecticut to work in concert with the CSMS to assure physician input into implementation of House Bill #6883.

—To receive, collect and research information concerning problems within the managed-care industry.

—To report to the House of Delegates/Council when appropriate.

AWARDS

CSMS PAST SERVICE AWARDS TO OFFICERS AND COUNTY COUNCILORS

Officers

John P. Bigos, M.D., New London, Secretary, 1995–1997

Sultan Ahamed, M.D., Norwich, Vice-Speaker of the House of Delegates 1995–1997

Jerome K. Freedman, M.D., Princeton, NJ, Delegate to AMA, 1983–1997

Dickerman Hollister, Jr., M.D., Greenwich, Councilor-at-Large, 1996–1997

Councilor

Fairfield County

Stuart B. Mushlin, M.D., Stamford, Councilor, 1994–1997

Address of the Executive Director

CSMS House of Delegates—Annual Meeting

12 November 1997

TIMOTHY B. NORBECK

FEW people in the world will forget that depressing and tragic week that began some 73 days ago on August 31, with Princess Diana's death, and which ended with her funeral on September 6. Two other world notables also died that same week. Almost lost in Diana's tragedy were the deaths of Victor Frankl, Nazi concentration camp inmate No. 119104 on September 2 and Mother Teresa on September 5.

Known as the "Saint of the Gutters," Mother Teresa was known to all for her almost 50 years of devotion to the poor, destitute and dying, and her funeral did receive some attention.

But Viktor Frankl's death almost went unnoticed. The Austrian physician's contributions were different but very meaningful. His *Man's Search for Meaning* was named one of the most influential books in America by the Library of Congress. Though as a Viennese Jew he was certain to be sent to Auschwitz, Dr. Frankl let his American visa lapse in order to remain with his parents. He was sent to Auschwitz and Dachau from 1942 to 1945 and saw his mother, father, and pregnant wife killed in the death camps.

Viktor Frankl gained his fame from his writings of those experiences and of his courage in helping people find a reason to live and survive the atrocities. A trained medical scientist and observer of human health, he found that it was not the prisoners who were physically the strongest who remained the healthiest. Instead, it was those who tried to help others, those in whom kindliness and generosity prevailed. Whatever their size and physical constitution, it was they who turned out to be the durable ones.

Service above self must be why all of you were able to complete your arduous training and fulfill that special covenant with your patients.

I choose to remember Dr. Frankl for his inspirational words that "Everything can be taken from man except the last of the human freedoms, his ability to choose his own attitude in any given set of circumstances—to choose his own way." He also made us think of the plight of those who have enough to live on, but not enough to live for—those who seem to have the means, but no meaning.

In the recent Balanced Budget Act of 1997, federal lawmakers didn't bat an eyelash in reducing the growth of Medicare outlays by $115 billion between 1998 and 2002, with a great majority of it, of course, coming from those who give the care. And home health expenditures will be shifted gradually from Part A to Part B, artificially saving Medicare from bankruptcy for a few more years while still another commission studies the problem. And when Part B expenses rise dramatically because of that home health transfer, guess who once again will be blamed for it—that's right, the nation's physicians.

And the most ridiculous gaffe of all—in an attempt to supposedly offer Medicare patients more options, physicians will be allowed to contract privately with them, but only if they do not bill Medicare for any patients for two years. Of all the perverted attempts to give patients more choices, that one takes the cake. It's an embarrassment to the Congress and Administration and also reveals a blatant distrust of physicians. AMA is working to make the option a real one, but the legislative road will be difficult.

Physicians can relate to the story of the successful businessman who was on his deathbed. He called in his best friend and arranged with him to have his mortal remains cremated. The friend agreed, than asked, "What do you want me to do with the ashes?" The dying man said weakly, "Put them in an envelope and send them to the IRS. Tell them, 'Now you have everything!'"

Let us use our adversaries to make us bolder. To be a major player in this age of health-care giants, physicians must become giants, too. Our new CSMS MSO, MD Advantage, is one way of accomplishing that.

We should be grateful for the challenges and the many bumps in the road, for they strengthen our resolve to fight those who seek to subjugate you.

When Gladstone was prime minister of England, there was one road where more horses died than any other road. Gladstone ordered a study of it and discovered that the road was the only one in England that was perfectly straight and level. The horses traveling this road used only one set of muscles and the rest atrophied. When an attempt was make to use any of the unused muscles, the strain was too much and the horses died. It was the lack of challenges, the absence of physical and mental stimulation that killed them. We're lucky—our "horses" don't have a life of ease, sameness, and boredom.

We must believe that we can win the physician autonomy battle. We must remember that it is difficult to attain anything if you think you can't. An elephant can easily pick up a one-ton load with its trunk. How is it then that, at the circus, those huge creatures stand quietly tied to a small wooden stake? The reason, of course, is that while the elephant is still young and not so strong, it is tied by a heavy chain to an immovable iron stake. He tries to break the chain but soon discovers he can't—as he grows and becomes stronger, he never again tries to break loose because he *thinks* he can't. Many people behave like elephants—they remain restrained in thought and action all their lives—they never move further than their boundaries of self-imposed limitations.

One bond should unite us all—and that is to win back physician autonomy. Some may scoff at such a lofty goal, but then again, who thought that it was possible to attain an external binding appeals process in the Insurance Capitol of the World? As Theodore Roosevelt said: "The best prize that life offers is the chance to work hard at work worth doing."

Speaking of work, I read recently that the teenage employee's work ethic is worse than a decade ago, according to 58% of U.S. employers polled by Reid Psychological Systems. It reminds me of a story about a congregation that had had the same pastor for many years. When he finally decided to retire, they interviewed for a replacement. They soon found that the younger candidates had very different ideas on the pastor's duties from those of the older generation. Finally they found a bright young man to lead them spiritually into the next century.

The new pastor made many changes which resulted in budget increases. One of the changes was to hire a man to take care of the extensive church lawn and grounds. Concerned about this new and unexpected expense, the budget committee decided it was time for a talk and called the new pastor in for a meeting.

"We see that you have hired a man to take care of the church grounds," they began. "Indeed I did," replied the young pastor, "and he does a fine job of it, too."

"Yes, he does," replied the budget committee spokesman, "but we wondered if you knew that our previous pastor took care of the grounds himself?"

"Yes, I did know that," said the young man. "And?" prompted the spokesman. "And I called him," replied the young pastor, "but he doesn't want to do it any more."

Some 57 years ago, back in 1940, Walter Lippman described the challenges facing Americans by saying, "You took the good things for granted, now you must earn them again. For every right that you cherish, you have a duty which you must fulfill. For every hope that you entertain, you have a task that you must perform. For every good that you wish to preserve, you will have to sacrifice your comfort and your ease. There is nothing for nothing any longer!"

I would add one more line to those words which still apply today. If you want to take back the system—to be in charge again—you must put aside your differences and support those who support you. If you haven't joined COMPAC/AMPAC this year, please contribute your $100.

I was reading an Illinois State Medical Society newsletter the other day where the president, Dr. Jane Jackman, was admonishing her colleagues because *only* 40% of Illinois physicians were members of the PAC. Our membership has never been higher than 10% and now is an abysmal 7%. If you haven't joined, please use the contribution envelope at your seat. Believe me, it will make a difference.

Three weeks ago at a New Haven University managed-care symposium, AMA President-Elect Nancy Dickey did a superb job in keynoting it, and Dr. Shep Nuland, a member of *Connecticut Medicine's* editorial board and Literary Editor, gave a riveting speech. I was on a panel with Toni Harp—an energetic and articulate state senator from New Haven. All panelists were asked to submit to the moderator a short bio for use in an introduction. Senator Harp's introduction, and we should make note of it, was that she was the recipient of the Connecticut State Medical Society's distinguished legislative service award. Our award to her for outstanding work on managed-care reform obviously meant a great deal to her. We are making significant progress.

Physicians are going to take back the system. Why am I so confident, you might ask? Because you deliver the care. You direct 85% of all health-care spending. You are trusted by your patients far more than insurance representatives are. You enjoy the confidence of your patients, and your influence will only increase as more health plans become more patient-driven. All the polls confirm this.

Why am I so confident that doctors will take back control?

I'm confident because AMA Board Chair Tom Reardon recently addressed 100 CIGNA Medical Directors in Washington, D.C., took the hard AMA line on managed-care reform, answered questions for an hour and was warmly received. He was followed at the podium by California Congressman Pete Stark—not exactly considered a friend of medicine, as you know—who told that audience that "physicians need to gain back control of the health care system."

I'm confident because a new Louis Harris poll reported that in August, 44% of the American public said the move toward managed care is a good trend, compared to 59% in 1995. Another 44% said the trend was bad, up from 28% in 1995. Additionally, 33% said they thought managed-care growth would improve the quality of care, while 54% said it would harm quality. The public is listening, the tide is turning, and while managed care will undoubtedly survive, it won't in its present form.

I'm confident because even *USA Today* came out two weeks ago and acknowledged that the health-care pendulum is swinging toward consumer rights. "There will indeed be some new expenses," it said. "But those costs are alternately essential, inevitable, or defrayable. None are intolerable."

I am confident because recently three HMOs, along with the AARP and Families USA, announced their agreement on principles for patient protection. They seek 18 broad reforms. More HMOs and organizations are bound to join that effort.

I am confident because of physicians like Dr. Mark Quigley, who died so tragically while coming to the aid of an injured motorist, so willingly help their fellow men and women even outside of their practices.

I am confident because the Kaiser Family Foundation/ Harvard University National Poll, released one week ago today, revealed that a majority of the public believes that managed care has decreased the quality of care for people who are sick. Kaiser Foundation President Drew Altman said that "managed care is winning in the health-care marketplace, but it is in danger of losing the battle for public opinion."

I am confident because states have passed 182 managed-care reform bills, up from 100 in 1996—including our wonderful victory in Connecticut. And this is just the beginning.

A beginning better than the one experienced by the lawyer who died suddenly, and found himself waiting in line before the pearly gates to begin his afterlife. Finally his turn came and he faced St. Peter, who said to him, "Well you seemed to have passed the preliminaries; now to get into Heaven, you just have to spell a word correctly."

"What's the word?" he asked. "The word is LOVE." "L-O-V-E" spelled the lawyer. "O.K., you're in," said St. Peter as he opened the gate. At that moment a loud alarm sounded, and St. Peter said, "That means there's an emergency somewhere in Heaven and I have to go check it out. Would you mind staying here at my post for a few minutes until I get back?" "Not at all," replied the lawyer. "If a soul comes up from earth, just do what I did."

No sooner had St. Peter left when the lawyer saw a woman approaching the gates, and recognized his wife standing before him. "Mabel, what are you doing here?"

"Oh, George, I was so shocked when you passed away, I guess I died of a broken heart. But at least, my darling, we'll be together for all eternity. How do you get the gates open?" she asked. "All you have to do is spell one word," said George, "and you're in." "Well, what's the word?"

He paused. "Czechoslovakia."

I have had the opportunity recently to read the latest book by our own Dr. Shep Nuland, and I commend it to your reading. In the book, *The Wisdom of the Body*, Dr. Nuland explains in the most wonderful way why it must be so satisfying to be a physician. On page 23, he describes the euphoria he felt after saving the life of a 42-year-old who had suffered an from a ruptured aneurysm of the splenic artery. In that passage, Dr. Nuland writes that "Something within me wanted to sing and shout, to acclaim my triumph to the heavens and the ages—a woman's life had been saved, and I would always remember the wonder of this night."

What a marvelous expression and feeling: "the wonder of this night." Whether *you* have saved someone surgically or through a timely diagnosis, every physician in this room has had his or her own "wonder of this night"—perhaps every day where you impact the lives of your patients in so many different meaningful ways.

There is too much to fight for—too many reasons to stand up for those future wonders of the night—for you and those who follow in your footsteps—to ever give in to those who would compromise good patient care.

Our managed-care reform package is a wonderful beginning—but that's what it is—a beginning. We need to take back the system, to put physicians back in charge again. There is a steep price to be exacted for that, however. It requires physician unity and strength, hard work, political action and even patient involvement.

Fifty years from now, there may not be HMOs or managed-care organizations. Fifty years from now, there may not be insurance companies. Fifty years from now, there may not be hospitals as we know them. But I would remind our adversaries, those who would sacrifice care for cost, that 50 years from now, there will be patients, and there *will* be physicians to care for them.

In closing, as the French writer Victor Hugo said: "The true leaders move forward through the storm. The air becomes difficult to breathe. The abyss yawns beneath them. Some fall. Others stop and retrace their steps; theirs is a sad weariness. The bold ones continue. They are eyed by eagles; the lightning plays about them; the hurricane is furious. No matter, they persevere."

Or put in different words by George Bernard Shaw, who made this observation about circumstances:

"I am tired of people who blame everything on the circumstances. I don't believe in circumstances. If the circumstances don't suit you, then make up your mind to get up and change those circumstances so that they will."

This is what your CSMS is all about.

CSMS-IPA, INC.
CONNECTICUT STATE MEDICAL SOCIETY
6 Divine Street • North Haven, Connecticut 06473-2174
203-776-5759 • 1-800-345-9272

REPORT TO THE HOUSE OF DELEGATES OF THE CSMS

DAVID D. THOMPSON, JR. M.D.
PRESIDENT, CSMS-IPA
NOVEMBER 12, 1997

MERGER WITH PHS

Foundation Health System, the parent company of M.D. Health Plan, has purchased PHS. There have been procedural problems with the completion of the sale and the preparation of the prospectus that needs to be mailed prior to the consummation of the deal. However, when completed, medical management will be entirely under the control of Vincent Catrini, M.D., our Chief Medical Officer. Vince will retain this role and title in the new company. CSMS-IPA will be the IPA for all members of the new company. The combined membership of PHS, MD Health Plan and some Foundation Health System PPO members will exceed 600,000 on January 1, 1998. All members will be seen through the CSMS-IPA, a wholly owned subsidiary of the CSMS.

All present CSMS-IPA physician providers will be able to see all members of the new company. No additional applications or paper work is necessary. All present providers of PHS who are not providers with the CSMS-IPA will be allowed to join, and the membership fee will be waived during the transition period. To see any of the members after a brief transition period will require the physician to be a member of the CSMS-IPA.

All policies and procedures will be the present policies and procedures of the CSMS-IPA. The Board of Directors of the CSMS-IPA, composed entirely of practicing physicians representing the County and State Medical Societies, makes all the decisions with regard to fees, utilization, etc. We have total control, but we have to live within a budget.

UTILIZATION

The CSMS-1PA commissioned Milliman and Robertson to evaluate our overall utilization. They found that our imaging expenses were almost double what they should be on a per member per month basis. After extensive interviews and presentations, National Imaging Associates was selected to help with our overutilization problems. Initially, they will be credentialing all imaging providers. Some small scale providers may not be providing the quality necessary to meet the standards we have set. We are also reassessing our laboratory costs. Physician performed tests will soon be paid at a level equal to hospital labs. We expect to continue our present lab provider network but at a reduced cost to the IPA.

CONSULTING ARRANGEMENTS

The Executive Committee of the IPA has been charged with interviewing consulting firms with the intention to have expert help in evaluating and correcting our present operations. We have already heard from several excellent candidates and will be making our recommendation to the Board of Directors at a special meeting on November 3.

In addition to making recommendations for our future undertakings, one main goal will be to integrate a new infrastructure into our organization. The rapid increase in size requires more full time oversight. We will be selecting an Executive Director, and additional support staff to make our operations more effective.

CONNECTICUT'S ONLY STATEWIDE IPA

Book Review

The Wisdom of the Body
by Sherwin B. Nuland, xvi 379 pp, index
New York, Alfred A. Knopf, Inc. 1997
$26.95 ISBN 0–679–44407–6

It is impossible to encapsulate in a few words what Dr. Sherwin Nuland has achieved in 370 pages of carefully crafted prose in *The Wisdom of the Body* a title in the tradition of Starling, Cannon, and Sherrington. Clearly, he has duplicated the success he attained several years ago with *How We Die,* and has again provided the general (nonscientific) public an understandable, colorful, and insightful analysis of human biologic events. It is an added benefit to us that he is a member of our Society and an editor of this journal.

At one level this is a human biology and physiology text for laymen which describes the molecular and cellular basis of life; the intricate workings of most of the major organ systems; the continuum of genetics, reproduction, fetal development, and parturition; and the manner in which the brain and nervous system relate to bodily as well as intellectual function. Fortunately, Dr. Nuland has the rare gift of explaining such profound things in straightforward, comprehensible terms.

At another level this is a poetic celebration of the wonders of the human body in all the intricacy, feedback loops, homeostatic mechanisms, and fine balance that is the "Wisdom" that keeps the whole organism functioning normally in the face of assaults of many kinds. It is the body's instability and adaptability that creates stability. He makes this modern reductionist biology fascinating and entertaining reading by illuminating it with dramatic examples from his own long surgical career, which are often described from the patient's perspective in the patient's own words.

At a third level Nuland makes the strong argument (that reflects his own philosophic position) that it is the elegance of the complex integrated systems of the body that is the basis for the abilities and achievements of man that go far beyond those of any other species. He refers to these achievements collectively as the products of the "Human Spirit" and they include the higher order activities like abstract thought, reason, judgement, emotion, and artistic expression which have enabled the creation of cultures and civilizations. He sees the biologic systems and the "human spirit" as a continuum, without the need for invoking any duality between body and mind or spirit.

Nuland's storytelling ability, his feel for words, and his autobiographical use of clinical examples are important strengths, as is his ability to describe a physiologic phenomenon in lay terms and to dissect a term and trace its etymology. His colorful language, such as describing a GI problem as an "execrable rectal epic," adds to the joy of reading his prose. So does his vivid use of images, as when he describes the limbic system by relating how the fleeting recollection of a fragrance evoked memories of his mother's goodnight kiss, her perfume, and the security she represented when he was a very small boy. I was occasionally distracted from my attention to a theme under discussion by his extended descriptions of surgical procedures, and periodically I squirmed when he described intimate personal events from his own life. But, it is this intensely autobiographical approach that enables him to convey as well as any author what it is like to reap the joys, experience the sorrows, and bear the burdens of being a physician.

Why should physicians read this book? First, for the sheer pleasure of being exposed to the fine writing of a colleague; second, for an excellent current, biomolecularly based review of human biology; third, as a guide for discussing bodily phenomena with patients in understandable terms; and fourth, as a reminder of the remarkable nature of our human biology, and the heights to which the "Human Spirit" is capable of rising.

Finally, one doesn't often experience visceral feelings while studying human biology, but reading this book evoked in me the same romantic thrill of discovery of biologic mysteries that I remember as a youngster while reading authors like Paul deKruif. This volume ought to create excitement, wonder, and inspiration, even in jaded physicians.

C.F. Hinz, Jr., M.D.
Avon

Consumer Concern Or Complaint Form Regarding Group Or Individual Health Insurance Including Managed Care Plans

To Be Submitted To
THE CONNECTICUT DEPARTMENT OF INSURANCE
CONSUMER AFFAIRS DIVISION
P.O. BOX 816
HARTFORD, CT 06142-0816

Phone: (860) 297-3900 or 1-800-203-3447 Fax: (860) 297-3872

The Consumer Affairs Division of the Department of Insurance receives, reviews and responds to complaints and inquiries from state residents concerning insurance related problems. The staff examines each complaint to determine whether statutory requirements and contractual obligations within the commissioner's jurisdiction have been fulfilled. The Consumer Affairs Division coordinates the resources available within the Department to address consumer complaints.

In order for the Division to pursue a formal review of a concern or complaint, the consumer must submit a written explanation to the address listed above with as much pertinent detail as possible. Each written submission to the Consumer Affairs Division will be acknowledged.

Name of person filing the concern or complaint:

____

Address: ______________________________________

Phone where the Department can contact you: (_____) ____________________

This concern or complaint concerns the following Insurance Company or Managed Care Plan: ______________________________
Policy Number: ______________________________
Name of Policyholder: ______________________________
Name of Enrollee: ______________________________
Name of Patient: ______________________________
Patient is ___ **self** ___ **dependent** ___ **other** (explain) ______________________________

The following is a detailed description of the concern or complaint:

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DETACH AND / OR COPY DETACH AND / OR COPY DETACH AND / OR COPY DETACH AND / OR COPY DETACH AND / OR COPY DETACH AND / OR COPY

CSMS PHYSICIAN PLACEMENT SERVICE

The Society maintains the Physician Placement Service as a *free* service to the medical profession, hospitals, and communities in Connecticut.

***Opportunities* should be typed, double-spaced copy on letterhead and submitted to CSMS, Physician Placement Service, 160 St. Ronan Street, New Haven, CT 06511 (203) 865-0587 or fax to (203) 865-4997. These will be published as space permits and will be distributed to physicians making inquiries of such *opportunities*.**

***Physicians wishing to locate* in Connecticut may call the office requesting opportunities in their specialty. Also, candidates are invited to submit a resume to be kept on file with the Society. An announcement of a physician's availability will be published in two issues of *Connecticut Medicine* as space permits.**

Listing of physicians in the Placement Service does not in any way represent certification by the Society. Investigation of credentials and experience is the responsibility of those seeking applicants for positions.

Announcements on the Physician Placement Service page under Classified Advertising are charged at the regular Classified Advertising rate.

OPPORTUNITIES FOR PRACTICE

DERMATOLOGY

Busy modern office in Eastern Connecticut shoreline seeks third dermatologist full- or part-time. Excellent clinical and surgical skills a prerequisite. Send CV to: Eastern Connecticut Dermatology, 491 Gold Star Hwy., Ste. 310, Groton, CT 06340 or fax to (860) 445-1665.

FAMILY PRACTICE

Tired of the rat race? Licensed physicians (M.D./D.O.) needed for full- and part-time. No nights, no call, no hospital responsibility, no weekends. Full-time: paid vacation and CME time, malpractice insurance. Must be credentialable by most health insurance carriers. Send CV to: FP/RH c/o CSMS.

GENERAL PRACTICE

Northeast's largest and growing occupational screening practice seeks GP. This is a non-traditional (mobile) environment involving well-care examinations for industrial workers for OSHA compliance purposes. Excellent opportunity for physician seeking a change from straight medicine. Position shall mature into Medical Directorship as practice grows. Extensive travel throughout the Northeast is required. Excellent income and benefits package. For more information, send CV to the attention of Christopher A. Crowne, Mobile Medical Testing Service, 71 W. Dudleytown Rd., Bloomfield, CT 0600.

INTERNAL MEDICINE

Physician-primary care-residency manager, Griffin Hospital, Derby. HPSA. A major affiliate of Yale University School of Medicine. Excellent opportunity for academically-oriented individual, minimum requirement three years internal medicine residency. ABIM certification preferred. Title of Clinical Instructor in Medicine at Yale given. Send CV to: Dr. Vincent A. DeLuca, Jr., Chairman, Department of Medical Education and Student Affairs, The Griffin Hospital, Derby, CT 06418.

MEDICAL DIRECTOR OCCUPATIONAL MEDICINE

Excellent opportunity for a BE/BC IM, GP, ER, OM, or GS to join this rapidly growing occupational medicine practice that is completing its Connecticut expansion. Clinical or administrative responsibilities and experience in Connecticut worker's compensation, ADA, and soft tissue injury management required. Extremely competitive salary, bonus, and benefits package offered. For more information, send CV to the attention of Susan Henry, Industrial Health Care Company, 1095 Day Hill Rd., Windsor, CT 06095.

PART-TIME

The Office of Hearings and Appeals, Social Security Administration, is seeking individuals who would be willing to serve as medical experts. We have five United States Administrative Law Judges who preside at hearings and issue decisions on claims involving disability and Medicare benefits. In some cases, a medical expert is needed to review the medical evidence prior to the hearing and then testify at the hearing. The medical expert may be asked to clarify ambiguities, to resolve contradictory medical evidence, etc. This is not a full-time position, and the medical expert serves under contract, not as an employee of the Office of Hearings and Appeals. Pursuant to that contract, the typical rate of reimbursement is $160.00 for studying the record and testifying at each hearing. Our current medical experts especially enjoy the opportunity to provide an important public service. Please contact Bruce H. Zwecker, Hearing Office Chief Administrative Law Judge, Social Security Administration, Office of Hearings and Appeals, 157 Church St., 22nd Floor, New Haven, CT 06510, telephone (203) 787-7771.

Physician wanted for part-time employment in a small college. Student Health Service Persons interested in young adults are encouraged to apply. Please send letter of interest and CV to:

Director, Student Health Services, Quinnipiac College, 275 Mount Carmel Ave., Hamden, CT 06518.

Physicians sought to participate in clinical research studies with a major contract research organization (CRO) in Connecticut. Currently seeking practicing physicians in the following areas: anesthesiology/surgery (post-op pain studies), endocrinology, neurology. Physicians compensated for assisting and recruiting and evaluating study volunteers. Nursing study coordinator provided. No research experience necessary. Call Dr. Cheryl Miller, SCIREX Corporation, (800) 724 0091.

PEDIATRICIAN

Collins Medical Associates, P.C., a primary care group practice affiliated with St. Francis Hospital and Medical Center, is looking to fill three pediatric positions. The first requires a BC pediatrician with an entrepreneurial flair to transition a retiring pediatric practice in Manchester. The second position is with a well-established female pediatrician in West Hartford who is seeking an associate. The third position is with a two-man, well-established, active practice in Bloomfield. All positions have a competitive compensation and benefits package and attractive call schedule. If you are interested in any of these opportunities please call Christine Fucci at (800) 892-3846 or fax your CV to (860) 585-3525.

PRIMARY CARE

HealthFirst, a growing regional community health center with three sites in eastern Connecticut seeks BC/BE FP/IM to provide full range of preventive and primary care. All sites are fully staffed, computerized, and integrated into an organizational network. Competitive salary and benefits. For more information call or send CV to: Recruitment Manager, 112 Lafayette St., Norwich, CT 06360, telephone (860) 885-1308, fax (860) 889-1982.

PHYSICIANS WISHING TO PRACTICE IN THE STATE OF CONNECTICUT

INTERNAL MEDICINE

Available immediately. Licensed in Connecticut. Passed National Boards. American Board certified M.D. at Tufts University School of Medicine. Internship and residency at the Hospital of St. Raphael. Office-based general internist with extensive managed-care experience, seeking to join a group or associates practice. Please respond to: Michael F. Collins, M.D., 53 Cotswold Close, Glastonbury, CT 06033, telephone (860) 633-5698.

RADIOLOGY

Does your walk-in clinic need a radiologist part-time? Will travel within the greater Hartford area. Please respond to: CSMS c/o RA/BK.

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All PAID classified advertising orders, correspondence, and payments should be directed to: CONNECTICUT MEDICINE, Classified Department, 160 St. Ronan Street, New Haven, CT 06511, Tel. (203) 865-0587. The Classified rates are as follows: $60.00 for 25 words or less; plus $1.00 each additional word. For confidential answers, the cost is $3.00 per insertion, sent in care of CONNECTICUT MEDICINE. Ad copy must be typewritten, double spaced, with payment, and delivered no later than the first day of the month preceding the month of issue.

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CORRECTION

In the September Special Issue of *Connecticut Medicine* The Institute of Living, the article entitled *The Hartford Retreat for the Insane: An Early Example of the Use of "Moral Treatment" in America,* the references numbered 13-26 were inadvertently left out of the publication.

The references are as follows:

13. Hartford Retreat for the Insane, *Rules and Directions for Those Employed in the Care of the Patients of the Retreat for the Insane* (Hartford, 1853), p. 6.
14. Hartford Retreat for the Insane, *Annual Report,* 184, p. 24; *Annual Report,* 1844, p.16.
15. Hartford Retreat for the Insane, *Annual Report,* 184, p. 22.
16. Hartford Retreat for the Insane, *Annual Report,* 184, p.16.
17. Hartford Retreat for the Insane, *Annual Report,* 184, p. 4.
18. Hartford Retreat for the Insane, *Annual Report,* 184, p. 32-33.
19. John Danforth to G. Cleveland, Letter dated July 28, 1843, Commitment Papers, Governors' Papers, Incoming Letters, 1828-44, RG5, Box 99, State Archives, Connecticut State Library.
20. See Elizabeth Parckard's *Martial Power Exemplified in Mrs. Packard's Trial* (Hartford, Conn: E.P.W. Packard; 1866); *The Great Drama: Or, The Millenial Harbinger* (Hartford, Conn: E.P.W. Packard; 2 vols., 1878-1879); and Lawrence B. Goodheart, "The Concept of Insanity: Women Patients at the Hartford Retreat for the Insane, 1824-1865," *Conn Hist* 1995; 36:41-5.
21. Andrew Scull, "Moral Treatment Reconsidered: Some Sociological Comments on an Episode in the History of Bristish Psychiatry," in *Madhouses, Mad-Doctors, and Madmen: The Social History of Psychiatry in the Victorian Era,* ed. Andrew Scull. Philadelphia, Penn: University of Pennsylvania Press; 1981:101-18.
22. For two historical approaches which take into account gender differences, see Goodheart, "The Concept of Insanity: Women Patients at the Hartford Retreat for the Insane," 31-47; and John Starrett Hughes, "The Madness of Separate Spheres: Insanity and Masculinity in Victorian Alabama," in *Meanings for Manhood: Constructions of Masculinity in Victorian America,* eds. Mark C. Carnes and Clyde Griffen. Chicago, Ill: University of Chicago Press: 1990: 53–56.
23. *Twelfth Census of the United States, 1900,* Vol. II: *Population* Washington, DC: 1920; Part 2, xx-xxxi. Race and nationality statistics for Retreat patients were tabulated from the manuscript census schedules of that year, available on microfilm from the National Archives. (See pp 641-9). Hartford's immigrant population was slightly higher than that of the state as a whole, 63% of the city's 80,000 residents. The African- American population for the state in 1900 was 15,226 (or 2%). The population of this community in Hartford at this time also hovered arm 2%.
24. Quoted in Cynthia Zaitzevsky, *Frederic Law Olmsted and the Boston Park System.* Cambridge, Mass: Belknap Press: 1982 p. 75.
25. Hartford Retreat for the Insane, Annual Report, 1875, p. 9.
26. *The Story of the Institute of Living,* Hartford, Conn: Institute of Living 1946: 2-4.

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